PROBABLE FATE

OF

SIR JOHN FRANKLIN AND CREW;

OR,

THE SCURVY IN THE ARCTIC SEAS,

AND

CORRESPONDENCE OF CAPTAIN W. WHITE WITH THE LORDS OF THE ADMIRALTY, AND THE PRINCIPAL COMMANDING OFFICERS OF THE LATE ARCTIC EXPEDITIONS,

ON

ITS PREVENTION AND CURE.

BY CAPTAIN W. WHITE,

LATE Hon. E. I. C. S.

Author of the "Evils of Quarantine Laws, and Non-Existence of Pestilential Contagion;" "The Means of Prevention and Method of Cure for the Cholera Morbus," &c. &c. —Published in 1839.

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PROBABLE FATE

OF

SIR JOHN FRANKLIN AND CREW.

&c. &c. &c.

"The all-surrounding heav'n,—the vital air
Is big with death; though no convulsive agony
Shakes from the deep foundations of the world
The imprisoned plagues, a secret venom
Oft corrupts the air, the water, and the land."

SCIENCE OF LIFE.

THE old year has passed, remarkable chiefly for the total abstraction of all thought and consideration for all affairs but that of "the Royal Hobby," the "Grandfather of Hobbies." In its vortex was swallowed up and lost sight of the dreadful calamity which had but just afflicted the nation,—the hundred thousand people who had perished by the plague. It was passed over as though it required no concern, or indeed any care to be taken against the future. The new year has been ushered in with momentous portentions—how it will end, remains to be seen; but, at all events, there is now ample opportunity for serious consideration of many topics which deeply affect the welfare of humanity and the interests of the British nation at large.

Considering the numerous expeditions which have been sent from time to time, during many centuries, into the Arctic seas, for the discovery of a north-west passage, the failures and the disasters with which they have been attended, it is somewhat surprising that in this enlightened age so Utopian a scheme should still have been persevered in; and not less so, that, after all the sad experience which had been bought, ships should have been sent upon so dangerous a service without being provided with a ship of retreat: the only security against shipwreck and other disasters incidental to such a voyage. To that omission may be ascribed the absence of all knowledge concerning Sir John Franklin, and the too probable melancholy fate of himself and crew.

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The problem of a north-west passage seems to have been first proposed in the ninth century. From that period up to 1553, various voyages had been undertaken for the purpose of solving the question; and in that year Sir Hugh Willoughby sailed from England, and is said to have discovered Nova Zembla: but, on his return, he was frozen to death in Lapland, with all his men! Between 1555 and 1577, several other voyages were undertaken for the same purpose, but no advance made towards a discovery of a passage. In 1578, two brothers, of the name of Frobisher, sailed upon the same "*Tom-fool errand;*" but they never returned, nor is there any conjecture respecting their fate! From that period up to 1719, many other unsuccessful attempts were made, and in the intervening period between that year and 1722, voyages are recorded to have been made by Knight, Barlow, Vaughan, and Scroggs; but no account of them was ever received! John Monk also sailed on a voyage of discovery to the north in 1719, and the only account received of him was, that all his men but two had died! In 1722 Behring sailed and discovered the straits and island which bear his name; he was afterwards wrecked upon Behring Island, and there he died! Between 1722 and 1818, many other voyages were made, and all were equally unsuccessful. In the latter year Buchan made a fruitless attempt to reach the Pole, and was obliged to return in consequence of the damage sustained by his ship. In 1823 Captain Parry was compelled by the scurvy to abandon his expedition, and with the *Fury* and *Hecla* to return. In a third expedition in 1825, he was equally unsuccessful, and the *Fury* was wrecked. In 1832, Rear-Admiral Sir John Ross, C.B. (then captain), after having been frozen up in the ice for four years was obliged to abandon the *Victory*, and, with great peril and difficulty, at length was saved. "The colours were, therefore," he says, "hoisted and nailed to the mast; we drank a parting glass to our poor ship, and having seen every man out, in the evening, I took my own adieu of the *Victory*, which had deserved a better fate. It was the first vessel that I had ever been obliged to abandon, after having served in thirty-six, during a period of forty-two years. It was like the last parting with an old friend; and I did not pass the point where she ceased to be visible without taking a sketch of this melancholy desert, rendered more melancholy by the solitary, abandoned, helpless home of our past years, fixed on immoveable ice, till Time should perform on her his usual work. The sea was everywhere one solid mass of ice: all was rock; it seemed as if there never was to be water again."

Notwithstanding all these successive failures and disasters, over a period of so many years, Sir John Franklin was sent, in 1845, upon what has been truly called a "Tom-fool's errand" to

the Arctic seas; and, as all the world knows, has never been heard of—a period now of seven years. Expedition after expedition has been sent in search of him, and they have all proved singularly unsuccessful in their object. The only traces of his expedition are such as leave little doubt as to his probable fate. It is proved that Sir John Franklin wintered in 1845 in a deep bight between Beechey Island and Cape Ryley. There the exploring expeditions of 1851 found three monuments erected to so many men of the *Erebus* and *Terror's* crews, with the following momentous epitaphs upon them:—"Choose you this day whom ye will serve;"—"Thus saith the Lord of Hosts, consider your ways!"

The black painted grave-boards with those significant passages of Scripture in white letters, were evidently erected for the information of future expeditions that might visit those parts, and, not improbably, they may then have thought it might be in search for themselves. It is singular, however—very singular—that no memento was left regarding the cause of their deaths, or any as to the period of the arrival and departure of the ships, or of the course which they intended to pursue. There is much mystery in all that. All that we know is the painful fact, that in so early a part of the voyage as January 1846 there had been buried two of the crew, and in April a third. It must be all conjecture as to the complaints of which they died; but if past experience in those seas enables us to come to any conclusion, it was in all probability from the scurvy, the pest of the sea—a terrible disease; and when it once attacks a crew, it is seldom got rid of without a change of climate, food, and scene. Even when it seems to have been subdued, it seldom fails to re-appear, and then even in a more malignant form. Such was the case in Anson's disastrous expedition. It attacked the crews in a most terrific manner in 1741, after rounding Cape Horn, and after some months the survivors were perfectly recovered; in the following year, on their leaving the coast of Mexico, they experienced an equally terrible recurrence of it. The scurvy appeared in the *Fury* and *Hecla* Captain Parry's expedition to the Arctic seas in 1822, and disappeared; and in 1823 it re-appeared again. Upon that subject we find in the Report of the Voyage, that "the re-appearance of the scurvy in the most favourable month of the year (August) and after a more liberal supply of fresh animal food than they could calculate upon procuring hereafter, were all confirmatory proofs of the progress of the evil." But let us look at the Report given by Captain Parry himself:—

"I am now under the disagreeable necessity of entering on a subject which I had at one time ventured to hope need scarcely have occupied any part of this narrative—I mean the

scurvy: some slight but unequivocal symptoms of the disease were this day (July 30, 1823) reported to me by Mr. Edwards, to have appeared among four or five of the *Fury's* men, rendering it necessary, for the first time during the voyage, to have recourse to anti-scorbutic treatment among the seamen and marines. During our first winter, the only instance in which any such symptoms had been discovered occurred in Mr. Jermain, the purser of the *Hecla*, who, however, recovered by the usual treatment, as the summer advanced. This short and dubious season being ended, the carpenter and boatswain of the *Hecla* were also affected; and, in the course of the second winter, Mr. Jermain's complaint returned with greater severity. In the months of February and March, Messrs. Henderson, Halse, and Scallon, of the *Fury*, were occasionally disposed to scurvy; Mr. Edwards (the surgeon) was, for a week or two, pretty severely attacked by it, and my own gums becoming somewhat livid, rendered a short course of additional lemon-juice necessary to restore them. These cases, however, shortly and permanently recovered; but in the spring, and even as late as the month of June, when there was reason to hope that every symptom of this kind would be removed by the increased warmth and cheerfulness of the season, and a change of diet afforded by the game, the disease again made its appearance in the carpenter and boatswain of the *Hecla*, and soon after attacked the gunner and Mr. Fife, the Greenland master. These cases, which were much more severe than any we had before experienced, had not now recovered, when the gums of four or five of the *Fury's* men betrayed this insidious disease lurkir ithin them, and made it necessary to administer lemon- e to them in more copious quantities than ordinary.

"It will, perhaps, be considered a curious and singular fact in the history of sea-scurvy, that during the whole of the preceding part of this voyage, none amongst us but officers should have been in the slightest degree affected by it, a circumstance directly contrary to former experience. To whatever cause this might be attributed, it could not, however, but be highly gratifying to be thus assured, that the various means employed to preserve the health of the seamen and marines, had proved even beyond expectation efficacious."

It is somewhat difficult to make out what Captain Parry really meant to say relative to the first appearance of the disease. In the first place he tells us, that "during our first winter, the only instance in which any symptoms had been discovered, occurred in Mr. Jermain, the purser of the *Hecla*," and that in the second winter "it returned with greater severity;" and after winding up what followed next, he informs us, "that during the whole of the preceding part of this voyage, none amongst us but officers were affected in the slightest degree."

How, then, can it be that Mr. Jermain's was the only case up to the 29th of July 1823?

"That a ship's company," continues the Report, "should begin to evince symptoms of scurvy after twenty months entire dependence upon the resources contained within their ship—an experiment hitherto unknown, perhaps, in the annals of navigation, even for one-fourth part of that period—could scarcely, indeed, be a subject of wonder, though it was at this particular time a matter of very sincere regret. From the health enjoyed by our people during two successive winters, unassisted as we had been by any supply of fresh anti-scorbutic plants or other vegetables, I had begun to indulge a hope that, with a continued attention to their comforts, cleanliness, and exercise, the same degree of vigour might, humanly speaking, be ensured, at least as long as our present liberal resources should last. Present appearances, however, seemed to indicate differently; for though our sick list had scarcely a name upon it, and almost every individual was performing his accustomed duty, yet we had at length been impressed with the unpleasant conviction that a strong predisposition to disease existed among us, and that no very powerful exciting cause was wanting to render it more seriously apparent. Such a conviction at the present crisis was peculiarly disagreeable; for I could not but lament any circumstances tending to weaken the confidence in our strength and resources at a time when more than ordinary exertion was about to be required at our hands."

If the scurvy, "evincing itself after twenty-seven months," in a ship "entirely depending upon the resources contained within it," could "scarcely be a matter of wonder," where would be the "*wonder*" in Sir John Franklin, under similar circumstances, without "any supply of *fresh* anti-scorbutic plants, or other vegetables," being attacked? Indeed there is the proof by the graves of his men, that it had attacked him at a much earlier part of the voyage. In short, the very fact of his so soon losing his men was of itself a predisposing cause to produce it in his crew, even supposing that scurvy was not the cause of their decease. The predisposing causes may be thus arranged:—

1. Cold and moisture; sudden transitions from heat to cold, and *vice versa*.

2. Indolence, or want of sufficient exercise to preserve the due tone and strength of the muscular fibres.

3. Excess of exercise; and, on the contrary, extreme hard labour disproportionate to the bodily strength, and the means of recruiting its daily waste.

4. Health impaired by preceding illness; and,

5. A gloomy sorrowful state of mind, which has a manifest tendency to relax the solids, impair digestion, and, of

consequence, communicate a morbid taint to the fluids. Of this fact, a remarkable instance is recorded by a respectable writer named Vander Mye, who says, "that during the famous siege of Breda, upon the report of bad news, the scurvy *always* spread astonishingly amongst the troops; but was in a manner altogether checked by the arrival of agreeable intelligence."

The OCCASIONAL or EXCITING CAUSES are principally these:—

1. Diet of difficult digestion, as animal food hard dried and long salted.

2. Food containing little nourishment, and such articles as naturally contain but a very small portion of that matter which is convertible into nutritious chyle, and fitted to repair that waste which the body daily undergoes.

3. Certain passions of the mind, as sudden grief and joy.

Of all these predisposing causes Sir John Franklin had abundance, and more than abundance, by the *putrid* "animal food" with which he was supplied.

Upon the 7th of August, Captain Parry "began to entertain doubts" considering the state of "the health of his officers and men," "whether it would still be prudent remaining out," and whether the probable evil did not possibly far outweigh the possible good. Therefore, "in order to assist his own judgment on this occasion upon one of the most material points, he requested the medical officers of the *Fury* to furnish him with their opinions as to the probable effect that a third winter passed in these regions would probably produce on the health of the officers, seamen, and marines of that ship, taking into consideration every circumstance connected with their situation." The reply of Mr. Edwards was as follows:—

"During the last winter, and subsequently, the crew of the *Fury* in general, together with the increased number and character of their complaints, strongly indicated that the peculiarity of the climate and service was slowly effecting a serious decay of their constitutional powers. The recent appearance also of several cases of incipient scurvy in the most favourable month of the year, and occurring after a more liberal and continued use of fresh animal food than we can calculate upon procuring hereafter, are confirmatory proofs of the evil.

"With a tolerable prospect of eventual success, other circumstances remaining unchanged, I should yet expect an increase of debility, with a corresponding degree of sickness, though, at the same time, confident of our resources being equal to obviate serious consequences."

The report of the medical gentlemen was forwarded to Captain Lyons of the *Hecla*, requesting his opinion. It was:—

"As I consider the health of your crew most important in every point of view, I shall in the first place state that, independently of the weighty opinions of your medical officers, it has for some time been my opinion, that the *Fury* passing a third winter in this country would be extremely hazardous. I am induced thus to express myself from the great change I have observed in the constitution of the officers and men of the *Hecla*, and by the appearance of some severe cases of scurvy *since* the summer has commenced; I am also aware that the same scorbutic symptoms have been noticed, and do still exist in the *Fury*.

"Our long continuance on one particular diet, almost total deprivation of fresh animal and vegetable food for above two years, and the necessary and close confinement for several months of each severe winter, are undoubtedly the causes of the general alteration of constitution which has for some time past been so evident. I therefore conceive that a continued exposure to the same deprivations and confinements, and the powerful monotony of a third winter to men whose health is precarious, would in all probability be attended with very serious consequences." The gallant officer, therefore, concluded with advising, "that the *Fury* and *Hecla* return to England." This they did as soon as the ice would permit.

It is clear that the *Erebus* and *Terror* must have been exposed to all the same concurrent causes of disease, if not in a much higher degree.

It will have been observed that on the 9th of August the surgeons report how "*confident*" they were "of their resources being equal to obviate serious consequences," even though the expedition did not return to England. How that confidence was well grounded, the death of Mr. Fife, on the 6th of September following, as recorded by Captain Parry, will best explain.

"In the afternoon of the 6th (page 479), I was much pained at being informed, by telegraph from the *Hecla*, that Mr. Fife, Greenland master of that ship, had just expired, an event which for some days past there had been too much reason to apprehend, the scurvy having within the last three weeks continued to increase upon him. It is proper for me, however, both to the medical officers under whose skilful and humane care he was placed, and to the means in which we were in this way so liberally supplied, to state that a part of the time Mr. Fife had taken so great a dislike to the various anti-scorbutic remedies which were administered to him, that he could seldom be induced to take any of them. The disease, in consequence, reduced him to a state of extreme debility, which at length carried him off without pain."

All that can be collected from this is, that under the "skilful

treatment of the disease" the patient got worse and worse; and as for the "various anti-scorbutics" that were "administered to him," they were worse than useless, positively injurious, as evidenced by the fact that he "took so great a dislike to them that he seldom could be induced to take any." This case will be found discussed in the correspondence which accompanies this. But from this one circumstance we collect the fact that, notwithstanding all the "*confidence*" of the medical men in their "*resources*," had those ships continued another winter out the probability is that they all would have died had they taken "so great a dislike" to the "*various* remedies" as Mr. Fife had done.

Of the expeditions now in Behring's Straits, the *Plover*, it appears, after being but seven months in the ice, had returned to the Sandwich Islands, the crew much affected with the scurvy; "unable to contend with the rigour of another winter in those latitudes." A fresh crew was made up for her from volunteers from the *Herald*, and drafts from the *Enterprise* and *Investigator;* and she again proceeded to Behring's Strait. We also find that there she suffered again from the scurvy, and would a second time have returned, had her crew not again been replenished from the *Dædalus*. The scurvy is also understood to have made its appearance on board the *Enterprise*, Captain Collinson.

All those circumstances tend to confirm the probability that the scurvy had at a very early period of Sir John Franklin's voyage made its appearance in his ships; and if so under all the circumstances, there is very little probability of him or of any of his crew being found alive. If it was "extremely dangerous," and "probable to be attended with very serious consequences" to Captain Parry, "the passing a third winter in that country," how much more so must it have been for Sir John Franklin to have made up his mind, as we have been assured that he did, to spend five, six, or seven winters in the ice. But this was the most improbable thing in the world; he was too experienced and too cautious a man to risk any such an experiment. The same may be said of the hypothesis of his having run up the Wellington Channel, after leaving his winter quarters in 1846, and that too with a sickly crew. Had he resolved upon such a measure, there can be little doubt but that he would have left an intimation of it near the graves. He well knew that the Wellington Channel is often for years frozen up, and that under all circumstances the return of his ships would be extremely problematical. He also knew that he would be exposed to the greatest danger for the want of a ship of retreat. He had been warned before leaving England by his friend Rear-Admiral Sir John Ross, who foresaw the perilous situation in which he would be placed, not to attempt

to carry into effect the orders of the Admiralty, to enter Barrow's Strait — his original destination — until such time as he had rectified the evil by establishing a retreat upon one of the islands to the north of Barrow's Strait, by building a house upon it.

This it appears he did not do; and it is scarcely possible to believe that he would have ventured any such passage without it. But if so, the opinion which Sir John Ross expressed previous to the sailing of the expeditions in 1850, that "if he did not do so, there is very little chance of his ever being found," has turned out too true. There is no evidence, however, that Wellington Channel was open in the summer of 1846; on the contrary, there is every reason for supposing that it may have been closed. The circumstance of its being open in 1851 is accounted for by Mr. Abernethy, late master of the *Felix*, Rear-Admiral Sir John Ross, as being "the mildest summer he ever knew in those seas." Mr. Abernethy has lately been examined before the Committee of the Admiralty on the recently returned Arctic expeditions; and in what estimation his opinions might be held is best collected from the following facts:—He has been six voyages in whalers; two voyages in the Arctic regions with Sir John Parry in the *Hecla;* was quartermaster and coxswain of Sir Edward Parry's boat, the *Enterprise*, and was with him when the *Fury* was lost; he was mate in the *Victory*, Admiral Sir John Ross, when frozen up for four years, and then abandoned; he was one voyage with Sir James Clark Ross in the *Erebus* (one of the missing ships), to the Antarctic seas; and one with him in the *Enterprise* in the Arctic seas, acting ice-master; and lastly, master in the *Felix*, Rear-Admiral Sir John Ross. He also thinks it very doubtful if it was open in 1846; or if it was that Sir John Franklin ever attempted to pass up. "The navigation," he says, "is most dangerous, the tide running five knots an hour, with heavy floe ice, cross currents, and broken land." The ships, moreover, he says, "were totally unfit for the navigation." The same may be said of H. M.'s ships just returned. "They drew too much water,—and being wall-sided could not rise with the pressure of the ice, and the floe ice must either go under or over them; but much more likely over than under." Of the power and effect of floe ice there has been a very striking representation recently given in the sketch of H. M. S. *Intrepid*, which appeared in the *Illustrated London News*. It is in fact admitted that the *Phœnix* steamer now fitting out at Deptford, is the only vessel ever fitted out fit for those seas; for she will, from her top fashion, go over the floe, while others will go under. This is the opinion of many experienced and scientific officers and men who have been in those seas.

So extremely dangerous, indeed, is the navigation in Wellington Channel, it is supposed to have been the reason why Captain Austin, notwithstanding his abundant supplies, declined running up. Indeed it appeared to be quite superfluous after Mr. Penny had written to him a note, stating that "all had been done up Wellington Channel that could be done." If this be correct, it seems to have been a most extraordinary thing that it should have been asserted that Mr. Penny came to England expressly to obtain a steamer to take him up the Wellington Channel, and that he did actually apply to have the same placed at his command. This, as a matter of course, gave rise to much speculation as to the propriety of Captain Austin not having gone up the Channel, and, it is said, gave occasion for the Committee of Inquiry at the Admiralty as to the proceedings of the late Arctic expedition. Upon that point Sir Edward Parry held some conversation with Mr. Abernethy, and the answer which he got was, that "*he thought Captain Austin had done right*" in not risking his ships in Wellington Channel. Where the difference of danger in 1851 and 1852 may be, it is difficult to understand.

But even supposing that Sir John Franklin did proceed up Wellington Channel in the summer of 1846, what probable chance can there now be of a possibility of his being alive, or that any traces of the ships or crew will ever be found. If it was "dangerous," "extremely hazardous," and "probable to be attended with serious consequences," Captain Parry's "remaining a third winter in that climate," how much more so must it have been for Sir John Franklin to have continued there seven? If he did go up, it is evident that he did so with a sickly and deficient crew; the proof of which is the three graves at Beechey Island. But supposing the crew to have been all in good health, and that he was locked up in the ice for a winter or two, with even plenty of *provisions (!)* on board, would he continue there year after year quietly awaiting his fate, without making any effort to save himself and crew? Is it not much more likely that he would have abandoned his ships in the summer months, and travelled southwards with a hope of extricating himself. If he did do so, it is tolerably clear that he must have perished. But supposing, again, that he had no occasion to do that, the ships in the summer months having floated, and again become exposed to the "dangerous navigation, the tide running five knots an hour, with heavy floe ice, cross currents, and broken land," and that with a sickly and disheartened crew, what must have been his fate? Everybody knows that a ship in the finest climate and smoothest seas cannot be worked without a healthy crew; and in the Arctic seas, as Captain Lyons has observed, it is most important in every point of view. Without one, the ships would inevitably

be beaten to atoms between the ice, or swamped by the floe. If wrecked, there is about as much probability of finding any tokens of it as there was of the *Fury*, as narrated by Sir John Ross.

"We proceeded now," says Sir John Ross, "to the beach where the *Fury* had been abandoned, but not a trace of her hull was to be seen. There were many opinions, but all were at liberty to conjecture what had become of the wreck. Having often seen, however, what the moving masses of ice could do on this coast, it was not difficult to guess in general what we could not explain in detail. She had been carried bodily off, or had been ground to atoms and floated away to the drift timber of these seas. At any rate she was not to be found: we had seen no appearance of her during the ten miles we had coasted within pistol-shot of the shore to the southward of the place, and we now examined it for two miles to the northward with no better success."

The *Fury* was wrecked upon a known spot in 1825, and many of her stores landed. The search after her took place in the summer of 1829. The result is seen. What chance can there then be of finding the wreck of the *Erebus* and *Terror*, without the slightest clue where and when, or even that it ever did take place; that probably, too, five or six years ago, the period since they left their winter quarters at Beechey Island?

The most probable thing is, that when the *Erebus* and *Terror* were lying in the bight between Cape Ryley and Beechey Head with a sickly crew, at so early a period of the voyage, Sir John Franklin resolved that, as soon as the season would permit, he would return to England; a precedent for which he had in the *Fury* and *Hecla* under Sir John Parry. With such a determination, it is possible that he may have thought it quite unnecessary to leave any memorandum of his having been there, or where he was going, anticipating that in a short time he would arrive in England and have the opportunity of explaining it all. The painted grave-boards at the tombs of the men who had perished, might therefore have been merely erected as marks of respect in memory of the dead. If he did leave his winter-quarters with a view of returning to England, it is very possible that he got locked up, like Sir James Clark Ross, in a field of ice, and like him may have been drifted away a thousand miles; but not being so fortunate as him, his ships upon the breaking up of the ice may have been crushed to atoms, or have foundered from the want of a healthy crew.

Upon this point we cannot do so well as to shew the probability of it from the extreme danger to which the *Fury* and *Hecla* were exposed when about to return to England.

"We know," says Captain Lyons, "from the experience of

last year, that it is not before the end of August or the beginning of September that the ice breaks up in the strait of the *Fury* and *Hecla*, and that it is not until that period that you will be enabled to re-examine its western entrance. Even when you should have done so, and, as there is every reason to expect, found it still closed, you would have barely sufficient time to return to Igloolik to pass another winter. Again, should the sea prove open to the south-eastward, and should you deem it expedient to attempt, by rounding the very extensive land in that direction, to find some other passage to the westward, I conceive that the extreme lateness of the season would not admit of your making discoveries of any importance, or, at all events, of such importance as to warrant your passing a third winter at the risk of the safety of your officers and crew."

At this period, July 18—"Although the dissolution of ice was hourly going on," says Captain Parry, "yet no very sensible alteration had taken place for some time past, such as might give us hopes of a speedy release from our confinement —the barrier of ice remaining fixed between the ships, and the sea was above five miles in breadth, though we lay at the very mouth of the bay, and the only chance of our soon getting out rested on an accidental crack of the floe, extending from near the point of Oongalooyat across to the mainland, and which had lately become somewhat wider." "The first of August now arrived, and yet, incredible as it may appear, the ships were as securely confined in the ice as in the middle of winter." The gallant captain then "determined, notwithstanding the apparent hopelessness of sawing their way through four or five miles of ice, to begin that laborious process; not, indeed, with a hope of cutting a canal sufficiently large to allow the passage of the ships to sea, but with a view to weaken it so much as, in some measure, to assist its disruption whenever any swell should set in upon its margin."

Having made the necessary preparations, the captain continues:—"On the 4th, our sawing work was commenced, with the usual alacrity on the part of the officers and men, and three hundred and fifty yards of ice were got out before night, its thickness varying from one to four feet." The sawing was continued, and on the 6th there was "now a broad canal, eleven hundred yards in length, leading from the open water towards that formed by the gravelly space."

We must here leave the enterprising voyager in his dangerous drifts, in "closely packed ice, flat and dangerous shores," until evening of the day on which Mr. Fife, Greenland master of the *Hecla*, had died, who, it appears, was a "very deserving individual, sincerely regretted by Captains Parry and Lyons and the other officers, and whose qualities as a

seaman and navigator, had it pleased God to have spared his life, would have rendered him an ornament to the naval service, into which he was to have been admitted as a master on the return of the ships to England." Alas! how melancholy to think of "deserving individuals" in so hopeless a project with the scurvy losing their lives.

"In the night of the 6th," continues Captain Parry, "the ships, which had before nearly closed each other, were again separated to the distance of several miles, though no motion was perceptible in the masses of the ice about them. The *Hecla* was now carried towards Winter Island, and the *Fury* up Lyon Inlet, so that on the 10th we had reached the islands up Five-Hawser Bay within three-quarters of a mile, where the *Hecla* was barely visible from the mast-head. On the evening of the 11th, however, the wind at length began to freshen from the north-west, when the ice almost immediately commenced driving down the inlet at the rate of a mile an hour, carrying the *Fury* with it, and within half a mile of the rocks, the whole way down to Cape Martineau, but keeping her in deep water. In the mean time the *Hecla* had been swept into much more dangerous situations, passing along the east and south sides of Winter Island; and after driving nearly up Five-Hawser Bay, being carried near some dangerous shoals about Cape Edwards, where Captain Lyons expected every other tide that she would take the ground. Indeed, for the last ten or twelve days, the situation of the *Hecla* had been one of imminent danger, and every exertion to remove her from it had proved unavailing. From this time, however, the ice continued to drift to the southward, and by some means or other the ships once more closed each other."

"On the following day," the 15th, "when the ships had closed each other within a mile, we could see the clear water from the mast-head, and the *Hecla* could not have been easily extricated. Such, however, are the sudden changes that take place in this precarious navigation, that not long afterwards the *Fury* was quite at liberty to sail, while the *Hecla* was now, in her turn, so immoveably set fast, and even cemented between several very heavy masses, that no power that could be applied was sufficient to move her an inch. In this situation she remained all the 16th, without our being able to afford her any assistance; and the frost being rather severe at night, we began to consider it not improbable that we might yet be detained another winter. We were, perhaps, indeed indebted for our escape to a strong westerly breeze, which blew for several hours on the 17th, when the ice being sufficiently close to allow our men to walk to the assistance of the *Hecla*, we succeeded, after several hours of hard labour, in forcing her into clear water, when all sail was made to the eastward, and

we shaped our course for the Trinity Islands in a perfectly open sea.

"We thus finally made our escape from the ice, after having been almost immoveably beset in it for twenty-four days out of the last twenty-six, in the course of which time the ships had been taken over no less than one hundred and forty leagues of ground, generally very close to the shore, and always unable to do anything towards effecting their escape from danger. When it is considered that, to have taken the ground in this situation, with strong and high tides keeping the ice in constant motion, must have almost involved the certain loss of the ships, and without the possibility of one offering assistance to the other, we cannot but consider this as one of the most providential escapes it has ever been our lot to experience."

The fact is, research and succour were sent too late. We find the graves of three of the men buried in the early part of 1846; and this is all that is known, or likely to be known regarding that ill-fated expedition. This scanty, but significant piece of knowledge, we only acquire in the latter part of 1851, and now six years since that took place. Had this discovery been made in 1847, it is impossible to say what happy results might not have taken place. When he was missing in 1847, that was the period for research; nor was it neglected from the want of the necessity of it not having been pointed out. By some documents which were printed and circulated by Rear-Admiral Ross some years ago, it appears that anticipating the very calamity which has taken place, on the departure of Sir John Franklin from England he gave him a "solemn promise" that "if he were missing in the spring of 1847, he would volunteer and do all that was possible for his relief;" and that "he did then offer his services to the government," strongly urging upon them "the importance of sending out immediate relief," and that he repeated it "in each succeeding year." The government, however, it seems, were deaf to that humane call. "But," says he, "I can impute no blame to the Lords Commissioners of the Admiralty, who were unfortunately misled by the numerous opinions adverse to mine, such as the sending early relief, and more in particular the size and description of the vessels to be employed upon that important service."

"Early relief" to the missing ships was everything, and how "*adverse opinions*" could have been entertained upon the subject is very difficult to understand; and still more so, how the Lords Commissioners of the Admiralty could, on such a point, have allowed themselves to be so influenced by "adverse opinions;" equally so as regards "the size and description of the vessels." It in fact amounts to this, that they had no opinion

of their own, and were entirely regulated by the opinions of others. And as in that instance it is possible the same authorities who commanded so much respect, may regulate many other movements in that important branch of the public service. A serious thing, when great interests are at stake.

The more we look into the case of Sir John Franklin the more hopeless does it become. He sailed in the spring of 1845, and he then had but three years provision on board. By some "miraculous" process it is said to have been converted into five; and by his own "wonderful penetrating foresight," he found out that he could make it "*last him for seven.*" That period has transpired; yet we are now told that he could not have perished for want of food, as some Russians lived for many years in those latitudes upon the produce of the country. Everybody knows that the Russians can live upon tallow and oil; and that the flesh of the horses killed in the French campaigns in Russia was greedily devoured by them. To talk of what Russians have done, has no reference to what an Englishman can do. There is no vegetable or farinaceous food in those regions; and these are indispensable to the preservation of Englishmen's health; they have been used to them from their cradle and could not live long without it. If food had so much to do in producing the scurvy in the *Fury* and *Hecla*, and again in the *Plover*, why should not a worse supply have had a more serious effect upon the crews of the *Erebus* and *Terror?*

But the most distressing part of the whole affair, if not the most culpable, remains to be told; and which, it will be supposed when it came to the knowledge of Sir Francis Baring, First Lord of the Admiralty, must have shook his faith in the "sanguine *expectation*" which, in the spring of 1850 he expressed in the House of Commons, "that the ships would be found and the crews all well."

It appears, by the *Times* of the 15th of August 1851, that on the previous day Sir Francis Baring in company with Captain Milne and some other Lords of the Admiralty, "paid a visit to the Royal Clarence Dockyard (Superintendent Captain Sir Edward Parry, F.R.S.) at Portsmouth, which establishment they duly inspected." On the same day, a bench of magistrates, at the application of the parochial authorities in the vicinity of the dockyard, were considering what steps ought to be taken for the removal of a plague in the town. It proceeded from gases exuding from some thousand of tin canisters of what is called *patent preserved meats*, polluting the atmosphere of the place so as to occasion fainting and sickness to such an extent, that it only required an impested state of the air, like in 1849, to have bred a most destructive plague. The *Times* of the same day states that "it is a pain-

fully important fact, too, that this description of preserved *meat* formed a large proportion of the provisions supplied to the exploring ships under Sir John Franklin, and other vessels which have been sent at various times on distant services."

It is, indeed, a painfully important fact; for it has since to a great extent been corroborated by ships in the East Indies and on the Mediterranean stations returning further large quantities of those putrid meats into the "*Royal Clarence Victualling Yard*" at Portsmouth; the total number of cases amounting to somewhere about nine thousand, two thousand of which it appears the "*contractor's*" (!) agent removed, in August, from the dock-yard. No doubt to be resold again for ships in the mercantile navy. The examination in August was obliged to be discontinued for fear of the health of the town; and it has been resumed now that the weather is cold considering that it might be done with impunity. This has been requisite, as every case is obliged to be opened in order to come at the "*contractor's security*" for the amount of value for what is bad. The results of the examinations have been so very similar, it is impossible to do better than to look into the Report of Dr. Andrew Clerk, of Halsar Hospital, and Dr. Rundall, of High-street, Portsmouth, as it appeared in the *Times* in August 1851.

"On entering the store in which the preserved meat is kept, the atmosphere was found to be impregnated with a very disagreeable odour, which, in the immediate proximity to the cases, was so powerful as to produce a sense of faintness, and to excite nausea. A piece of wood that had been recently painted white, and exposed to the fœtid atmosphere, had become of a dark brown colour, and it was inferred from this that the gas pervading the store was owing to the escape of sulphuretted hydrogen gas from animal matters in a state of putrefactive fermentation. By chemical examination, this inference and the source of the gas was traced to the cases of meat. Covers of these cases were lifted up by the pressure of the gaseous matter evolved from the decomposition of the contents. When these cases were opened, variable qualities of gas escaped, of a similar character to that pervading the store, more intense, sickening, and almost insufferably noxious. From some of the cases, at the point of communication with the atmosphere, there dripped a thin, black, fœtid fluid, found, by microscopic and chemical examination, to be the result of putrefying gelatine and fat. In only one of the cases were the contents solid, and this case had been by accident perforated at the top, and the surface of the meat corresponding with it was covered with a greenish mould. Others of the cases contained more or less of a whitish-coloured, frothy, fœtid fluid; the gelatine in them had become completely liquefied, and the masses of fat that had resisted putrefaction, were yellow, hard, brittle like wax. Seve-

ral other cases were reduced to such a state of putrescence, that the nature of their contents were scarcely recognisable; six of these were taken at random from the stock and forwarded to the Museum at Haslar for examination. These examinations detected, in one canister, portions of lips, tongues, pancreas (sweetbread), mesentery with diseased glands, as also intestines (gut), which included feculent matter. A portion of liver was also found in the fluid debris of this case. In another was found a portion of tongue, epiglottis, pancreas, and mesenteric glands. The examination of the other cases detected similar contents.

"The results arrived at by these examinations were, that all the cases of preserved meat examined exhibited unequivocal signs of decomposition and decay; that most of the cases evolved, when pressed, a greater or less quantity of highly noxious gas (sulphuretted hydrogen), and that all of them emitted the odour of it; that the fatty and gelatinous parts of the contents were all of them partially, and some wholly, liquefied and decomposed; that the fat undecomposed was usually hard, and almost as brittle as wax; that the meat less affected was, in all the cases, more or less diseased, in one case partially, and in another wholly, reduced to a semi-fluid putrid mass: and that in two of the cases portions of internal organs were present which had been absolutely diseased before death. In the examination of these cases, one of the labourers, John Haynes, who assisted in opening them, became ill, and remained so during the night and a portion of the next day."

There were six thousand cases of this "*preserved*" meats intended for the use of her Majesty's ships of war, opened at the dockyard, early in January this year, 1852 — the canisters holding about ten pounds each. Of those examined, scarcely one-fifteenth was found fit for human use, and even that, though given to the poor, was scarcely fit for dogs.

The contractor for those "*preserved*" meats is reported, in the *Times*, as not to be found. He lived at Greenwich, and he is said to have had some powerful influence at the Admiralty (parliamentary?) which secured him against all competition a regular succession of contracts, during the last seven years, for the supplying those "*preserved*" meats for the use of her Majesty's Navy! That he is not to be "*found*" cannot be much surprised at, as he could not have been, for a succession of years, carrying on the horrid traffic, without anticipating a time when he might lose his patronage and be publicly called to account for his manifold sins and wickedness. But it is a matter of surprise that this very personage, Mr. Goldner, should now be said to be at Galatz busily employed in "preserving" meats for "*first-rate makers*" in London, to whom, some time since, his London establishment was transferred. But what is

more surprising than all, is that the said firm obtained a "*prize medal*" at the Great Exhibition for "patent preserved meats;" and they are now to be had by epicures at most of the *principal* Italian shops at the west of the town—the canister emblazoned with the royal arms, painted in all colours but the true.

It would be very unjust to cast all blame upon one individual, when to others there is a portion due. For years before the contract for hermetically sealed provisions was guaranteed to Goldner, complaints were very common of the frequent bad quality of the preserved meats sent to sea. A friend of mine, many years a captain of one of the largest East Indiamen, and who has not been to sea for these ten years, some years ago told me that when the *soup* and *bouilli* was served out to the troops on board, they would receive it for a mess, and forthwith toss it into the sea. On this point there is a letter in the *Times* of the 12th of the present month, January, which it is as well to look at here as affording a tolerable proof of the sort of traffic which has been carrying on—it is signed "*A Soap Maker,*" and it is to be presumed its genuineness, and the respectability of the party was, previous to publication first ascertained by the *Times*. It is as follows:—

"About eight months ago I was offered upwards of twenty tons of preserved meat at 2*l*. per ton, and I agreed to take it at that price to extract the fat from it to use it in my trade; but when it was brought to be delivered, the stench was so dreadful that I was obliged to order it away. Surely the present discovery is not a new thing to the Government officials, as I know that the twenty tons had been sent into the dockyard; and as it was London made, and by first-rate makers too, I feel constrained to write this letter to warn the authorities that all bad meats does not come from Galatz."

The putrid "preserved" meats which have been supplied to the Royal navy is truly a most horrible affair; and as to what dreadful consequences it may have been it is impossible even to conjecture. There can be no question but that the gases from those putrid meats, in the hold of a ship, with an infected state of the air, would be sufficient to breed a plague. In 1819 Captain White inspected a ship called the *Bengal*, lying outside the docks on the Keerpoy side of the river opposite Calcutta, with a view of taking a passage in her to England. She had been in dock for repairs, the crew were still on shore, and she had begun taking some cargo in. She was from Liverpool, and was bound for that port. The captain was a very nice man; and Captain White took a passage conditionally. The captain mentioned that he had a party on such a day coming to a ball and supper, and very politely invited Captain White to join it; but which was, from various causes, as politely declined. The ball took place. Alas, what a ball!

They kept it up, as it appeared, until near daylight, and then the party, consisting of about twenty-two, separated for their respective homes, never to meet again. On the following morning, when at breakfast, reading the newspaper, he was shocked to read of the sudden death of ten or twelve of the party who had been at the ball, and that there were few expected to live. In the midst of their mirth and enjoyment, they were inhaling a pestilential air that caused their deaths. It turned out that the part of the cargo which they had taken on board, consisted of hundreds, if not thousands of bullocks' horns, and those not sufficiently dried to stow in the hold of a ship. A providential escape, thought Captain White. More deaths were announced on the following day; and in all they amounted to nineteen. The horns were forthwith relanded, and the ship purified.

But for that unfortunate ball, in all probability a still more disastrous event would have happened. The ship, with a valuable cargo, numerous passengers, and her crew, might have gone to sea ignorant of the dangers concealed on board. A malignant putrid fever might have broken out and killed every one in the ship

In mentioning that case it is in order to shew that the supplying her Majesty's navy with putrid "preserved" meats is no inconsiderate affair, and that it is impossible to conjecture what dreadful consequences it may have produced. And this seems to be the more necessary as it has been stated, "that in consequence of the reports of the transaction, the representatives of the press had been prohibited attending the further examination of the abomination of putrid "preserved" meat. A measure no doubt originating in fear and alarm as to what the consequences ultimately might be. The ostrich, a very large bird, thrusts its head into a hole and turns its tail against the simoom with a view of avoiding its effects. The Lords of the Admiralty may shut the gate of the Portsmouth dockyard against reporters, but they will discover that that will not prevent them from obtaining a knowledge of what passes therein; nor will it shelter them from the pertinent and stringent comments of the press.

These "*putrid meats*," it appears, have now been more or less in use for many years. It has been stated that "a clean ship is the healthiest of human abodes." How, then, are we to account for the dreadful sickness and mortality which has of late years taken place in many of our ships of war, which may be presumed to be as "*clean*" as any ships can be? Have those ships been supplied with any of the putrid "preserved" meats, and emitted the gases from the hold tainting the air in the ship? When the cholera was at Malta in 1850, H. M. squadron put to sea and cruised at a long distance from the

island; yet they had 300 cases and many deaths took place. The *Apollo* troop-ship from Hong Kong the 1st of March 1850, arrived at Portsmouth on the 6th of August; sixty soldiers, three seamen, and three children having died on the passage from cholera and dysentery. The *Bellerophon* from her state was suddenly ordered in September 1850, to leave the Mediterranean squadron and repair to England: upon her arrival at Plymouth on the 14th of October, she was ordered still to cruise at sea. Had any of those ships the patent "*preserved meats*" on board? The *Fox* frigate took them out to India and has returned them to the dockyard. The same is said to have been the case with some ships in the Mediterranean squadron. The *Plover* was well supplied with them for the Arctic seas; and many were seen weeping when carried on board; a sure sign that they were bad. It appears to have been pointed out, and yet they were passed. It has been seen that she has once returned to the Sandwich Islands from the scurvy; and twice had her crew, or a large portion of it, exchanged, as unable to stand the rigours of the climate. It is stated by Mr. Abernethy that the whole of the preserved meats in the *Enterprise* in her voyage to the Arctic seas, under Sir James Clark Ross, were "*indifferent stuff*," though not so bad as those recently discovered at Portsmouth. The salt meat, he says, was also very bad,—"The coarsest possible of the kind. When boiled it once shrunk away from six pounds to two, was as hard as a brick, salter than brine, and for all the purposes of nutriment he might as well have had so much swab." This piece of beef was sent upon deck and was seen by Captain Sir James Clark Ross. It is also stated that Sir James Ross on his return in 1829 did report to the Lords of the Admiralty, the scandalous state in which the "preserved" provisions with which he was supplied were in; and it is clear that no notice was taken of that complaint, as fresh contracts were afterwards given, and other ships equally badly, if not worse, supplied. The complaint of the provisions in Sir James Clark Ross's expedition, had the effect of procuring somewhat better supplies for Captain Austin's expedition, and they were London made, but anything but what they ought to have been. There is no doubt but that almost ever since the contract of 1845 was given, complaints have been continually made:—and that without an attempt to suppress the monstrous evil. There is a great mystery in all this,—how, why, and wherefore the contractor Goulding was allowed for so long to continue in his horrid traffic. The *Hercules* (72) troop ship, in 1850, in her voyages from Ireland to the Mediterranean, the West Indies, Halifax, and Nova Scotia, conveying from place to place different regiments, had those "*preserved*" provisions twice a week; and when they were to be

served out, it is said that a general murmur prevailed in the ship; and that when delivered, some of them were continually being found bad, and thrown overboard.

There has, moreover, been a most mysterious difference made in the distribution of the salt and "*preserved*" meats, totally unaccountable until the Lords of the Admiralty condescend to explain why it was made. If a man or a mess—and which in a line of battle ship consists of twenty-four—at any period had rather not draw their rations of salt meat, fourpence is allowed for each such ration. The money thus obtained is laid out to buy articles which they find more useful. When the "*preserved*" provisions are served out, no allowance is made if they do not wish to receive them; and the consequence is, that, instead of remaining in store, they are received by the men, and often thrown overboard. Now, where is the difference in the estimation of the Lords of the Admiralty for stores between salted and "*preserved*" meats? and why should the difference have been made, that for the salt they may have an allowance, but for the latter none is permitted? It is affirmed that there are thousands of the men who never could be brought to taste the "preserved" meats, or even bear the sight of them. Who benefited by that distinction but the contractor? and what could secure him new contracts so well as that of compelling the men to receive that which they could not use, and which they would throw into the sea? But bad is the best; for it is declared, that whether it was mutton, beef, or bouilli served out, all were equally alike tasteless, and one and the same thing. "It is, indeed, a very serious thing," as has been observed, and it is to be hoped will obtain a most searching inquiry by a Committee of the House of Commons, and measures be adopted to obviate the possibility of such rascally proceedings recurring again. It will not have been forgotten the frightful mortality which took place in 1847 and 1848 on the coast of Africa in the squadron, nor the peculiar and dreadful case of the *Eclaire*, even after she had left the coast, and on the voyage home to those who went on board to afford relief, and after she arrived in England, when the men were obliged to remain on board and continue to breathe a pestilential atmosphere and in it ordered out to sea! "Without doubt," said the *Times*, "one of the most revolting incidents that ever insulted a civilized community, an outrage upon humanity, and disgrace in the country in which it occurred." The advocates of pestilential contagion were the authors of that "*outrage upon humanity*." Whereas, instead of the crew infecting one another and all those who went on board the ill-fated *Eclaire*, is it not possible that it may have proceeded from the gases exuding from "*preserved*" provisions in the ship, and the same on the coast of Africa.

From the facts which have been detailed, it is evident that no reliance can be placed in contracts for meats, particularly those of the "preserved" kind. The only way of avoiding, for the future, "dirty goods," at any price, is for the Government to establish "preserving," if not "curing" departments of their own. They build their own ships, make their own sails, make their own biscuits, and in short do everything but the most essential thing, and that is "preserve" their own meats. Twenty or thirty thousand a year might be saved by it, and better provisions furnished by fifty per cent.—that is, if properly and economically managed, but not so if made a Government job, with some well-paid high official at its head, knowing nothing about the trade, could take his salary, and leave the work for knowing under-strappers to do.

Once more to revert to the painful subject of the missing expedition. As long as there could have been a rational hope to be entertained that there was a chance that Sir John Franklin could be found, or any traces made of his ships and crew, it was an imperative duty to use every exertion to find them out. It would have been criminal not to have done so. When all prospect of hopes fail, and they certainly appear to do so, it seems to be highly criminal to risk the lives of men on such a forlorn hope.

These observations are made with pain and extreme regret, because they must prove distressing in the extreme to many a relation and friend. But why apologize when the same sentiments have been given by Sir Francis Baring, the First Lord of the Admiralty, himself. It may be remembered that in the spring of 1851, Sir T. D. Ackland urged upon Sir Francis Baring the necessity of sending out a steamer to meet Captain Austin on his return from the Arctic seas, or rather to ascertain if he had not been locked up there. He had with him two steamers, quite enough to bring him home if he were safe. To that proposition Sir Francis Baring replied:—"The Lords of the Admiralty having a very serious responsibility upon them, did not think themselves justifiable in sending other gallant men to risk their lives in this service. They must now do their duty in not risking the lives of others." In what respect, and under what circumstances, has that "*serious responsibility*" been shaken or removed? What circumstances have occurred to "*justify*" them "in sending other gallant men to risk their lives"? How, and by what means, can they shew that they are "now doing their duty" by "risking the lives of others"? It is truly paradoxical. Some "*adverse opinions*" must assuredly have induced Sir Francis Baring to change his mind.

If anything were wanted to prove the hopelessness of the case, and the wild and romantic hypotheses still entertained

as to where Sir John Franklin had gone, how he could have lived, how he is to be rescued, or what has been his fate, it is that of Lieutenant Pim of his having been wrecked in the glacier sea to the north of Siberia, a delusion in which Sir Roderic Murchison, President of the Royal Geographical Society, and many other humane gentlemen also shared. Under their auspices he went to St. Petersburgh,—met with a very gracious reception at the Imperial court. After alluding to "the lively interest which the Emperor has not ceased to take in the generous efforts made by the British Government to discover the traces of the Franklin expedition, as evinced by the co-operation of His Imperial Majesty," Count Nesselrode, in his letter to Sir Hamilton Seymour, the ambassador at St. Petersburgh, observes:—

"With similar sentiments of sympathy, the Emperor heard of the expedition proposed by Lieutenant Pim, of the British navy. But, unfortunately, between the conception of such a project and its realisation physical difficulties and insurmountable obstacles exist, which Mr. Pim, guided by his generous devotion, does not seem to have sufficiently foreseen, and concerning which it is the duty of the Russian government to enlighten him.

"It is easy to trace in the map of the world, across the immense wildernesses of northern Siberia, an itinerary which might lead to the end desired to be reached by Lieutenant Pim; but, in executing such a project, it must not be forgotten that, in addition to the enormous distances to be traversed, vast deserts must also be passed over, which, buried under eternal snows, offer neither means of transport nor provisions,—unexplored regions, in which tribes of savage people are scattered at wide intervals,—people over whom the Russian power exercises only the slightest influence, and whose warlike character, barbarous customs, and hatred of strangers are such, that the Imperial government would find it impossible to guarantee the personal security of Lieutenant Pim and his party."

SECTION II.

THE SCURVY IN THE ARCTIC SEAS,

&c. &c. &c.

FROM what has been detailed in the preceding pages, it will be evident the extreme dangers to which Sir John Franklin will have been exposed by the scurvy, as well as from the navigation in the Arctic seas. It has been seen that Captain Sir Edward Parry, who, it is said, had the very best of preserved meats on board, and abundance of fresh provisions obtained upon the spot, yet had the scurvy, and it disabled his officers and crew. The various expeditions which had for centuries explored in those seas and never returned—in all probability some of them may have perished by that disease. Indeed, the dreadful havoc which it has at various times made in our ships, has caused the failure of the most important enterprises. Take, for instance, Anson's voyage in 1741 to the South Seas; the ravages it committed were of the most frightful character, as will be seen at a future page. It led to the destruction of five-sixths of the crew, and the loss of many ships; but, what was worse than all, the failure of the expedition to capture Baldavi, and the capture of the Spanish settlements of Mexico, Peru, Panama, and California. In short, if not the foundation, it caused the superstructure of the national debt; as the capture of those possessions, from which the Spaniards drew their supplies to carry on their wars against Great Britain, would have enabled the British to have dictated to them any terms of peace. The loss of Anson by the scurvy seems to have fallen little short of thirteen hundred men. The Rev. Mr. Walker, chaplain of the *Centurion*, after particularizing the horrid event which had taken place, makes a solemn admonition to our rulers which seems to be somewhat applicable here.

"I cannot but observe," he writes, "how much it is the duty of all those who, either by office or authority, have any influence in the direction of our naval affairs, to attend to this important article, the preservation of the lives and health of our seamen. If it could be supposed that the motives of humanity were insufficient for this purpose, yet policy, and a regard to the success of our arms, and the interest and honour of each particular commander, should naturally lead us to a *careful and impartial examination of every probable method proposed*

for maintaining a ship's crew in health and vigour. But hath this been always done? On the contrary, have not salutary schemes been often treated with neglect and contempt? And have not some of those who have been entrusted with experimenting their effects been guilty of the most indefensible partiality in the account that they have given of their trial? I do not believe this conduct to have arisen from motives so savage as the first reflection thereon does naturally suggest; but I rather impute it to an obstinate, and, in some degree, superstitious veneration attached to such practices, which have been long established, and to a settled contempt and hatred of all kinds of innovations, especially such as are projected by landsmen and persons residing on shore."

It would hardly be supposed that this solemn warning, after such a dreadful event, would ever be lost sight of by those having "the direction of our naval affairs." The late disclosure of the "*preserved*" meats would make it appear that "the preservation of the lives and health of our seamen," either from "policy" or "motives of humanity," was not any longer considered to be "most *important in every* point of view"; and the following *correspondence with the Lords of the Admiralty* will also afford a tolerable sort of prime specimen of their "careful and impartial examination of every probable method proposed for maintaining a ship's crew in health and vigour;" particularly so when "exposed to the rigours of the climate" in the Arctic seas.

CORRESPONDENCE.

Captain White to the Lords of the Admiralty.

Islington, January 1st, 1850.

My Lords,—As you will naturally feel most anxious that the ships about to proceed on the Arctic expedition should be provided with everything which could possibly contribute to the health or comfort of the officers and crew, I have this day taken the liberty to forward to your lordships a jar of my curry or mulligatawny paste for trial; considering that it is possible that it might be found to be most useful, if not valuable, in the Arctic seas. It is perfect, requires no additions, and its general character is tested in a minute, with any meat.

I beg also to state, that I have transmitted a jar of it to Captain Collinson in order that he might try it, and I have acquainted him of this address intended to be made to you.

Herewith is enclosed some printed instructions for its use; in addition to which, I would beg leave to observe that it eats fine instead of mustard with hot or cold salt meats, and par-

ticularly so with the latter when diluted with vinegar. In the absence of all vegetables it will afford an excellent soup. Thus, the salt meat should be boiled in fresh water, and the liquor kept until cold, and skimmed of the fat; to every quart of liquor, boil in it four ounces of rice, or as much as it will absorb, and when the rice is nearly done, stir in a small bit of the paste, agreeable to palate. Care, however, must be taken that the rice is not boiled too much, or, if so, the fine bland mucilage with which it abounds will be drawn out, and its stamina lost. It will also be found greatly to improve the flavour of all the preserved soups, and to render them far more comforting to the stomach, more durable and supporting, and, what is of great consequence, more conducive to health.

This latter point is of so much importance, I should have been tempted to have dwelt upon it but for the fear of being considered obtrusive. However so far I will state, that during the late epidemic the healthful and medicinal qualities of the paste in cases of debility were fairly tested, in scores of instances, in many cases in public institutions with the approbation of the medical attendants, and in many other cases without; and the results invariably proved most successful,—such, indeed, as had been fully anticipated when the paste was invented twelve years ago. The French cook Charlotte at the Reform Club may be named as one instance, and M. Soyer himself as another, who benefited from it after an attack of cholera.

It now remains for your lordships to decide as to the possible use of it in the Arctic expeditions now fitting out; as also whether it is capable of being made generally useful in the Royal Navy.—I have the honour to be, my lords, your most obedient humble servant,

W. White.

Captain White to Captain Collinson, C. B., Commanding H. M.'s Ship *Enterprise* and expedition fitting out.

January 1st, 1850

Sir,—As it must be a matter of the utmost importance that the ships proceeding upon the Arctic expedition should be provided with everything which can possibly contribute to their comforts or promote the health of the officers and crew, I have this day forwarded to the Lords of the Admiralty a jar of my curry or mulligatawny paste, conceiving that it might be found useful in the Polar seas, and for their consideration as to its being used in the expedition now fitting out. I have therefore had the pleasure of forwarding to you to-day, a jar for your obliging acceptance, and which I beg that you will try, instead of mustard or sauce, with anything at dinner as it will at once shew its merits.

If the Lords of the Admiralty should decline sending any of it for the use of the expedition, I shall be happy to present for your acceptance a small case for your own use in the Arctic seas.—I have the honour to be, sir, your most obedient servant,

W. WHITE.

To Captain Collinson, C.B.
&c. &c.

The LORDS of the ADMIRALTY to Captain WHITE.

Admiralty, January 3rd, 1850.

SIR,—With reference to your letter of the 1st instant, transmitting a jar of your curry or mulligatawny paste, and offer to supply it for the officers and crew of the Arctic expedition, I am commanded by the Lords Commissioners to thank you for your communication, but to acquaint you that they must decline your offer.—I am, sir, your obedient servant,

W. R. HAMILTON.

To Captain White,
&c. &c.

Captain WHITE to Captain COLLINSON.

January 4th, 1850.

SIR,—The Lords of the Admiralty having declined supplying the officers and crew of H. M.'s ships about to be employed in the Arctic seas under your command with the curry or mulligatawny paste, I beg to state that upon your now intimating your intention of your obliging acceptance of the present proposed, it will with very great pleasure be forwarded.—I have the honour to be, sir, your most obedient servant,

W. WHITE.

To Captain Collinson, C.B.
&c. &c.

Captain COLLINSON to Captain WHITE.

H. M. S. Enterprize,
Woolwich, January 6th, 1850.

SIR,—I shall have much pleasure in accepting the kind present you are good enough to offer, and will not fail to reserve it for some period of great exertion, when I have little doubt but that I shall be enabled to report satisfactorily as to its nutritious and comforting qualities. It has for several years been my opinion that the substitution of curry instead of peas would be attended with beneficial effects in H. M.'s navy, and had I returned to a tropical climate in charge of a surveying expedition, it was my intention of proposing it to the Lords.—Believe me to be yours very truly,

R. COLLINSON.

To Captain White,
&c. &c.

Captain White to Captain Collinson.

Islington, January 9th, 1850.

Sir,—I have this day had the pleasure to forward to H. M. dockyard to your address, a case containing one dozen pints curry or mulligatawny paste, a small jar of *curried* beef, a copy of my work on "The Evils of Quarantine Laws, and Non-Existence of Pestilential Contagion; the Means of Prevention and Method of Cure for the Cholera Morbus, &c." published in 1837; as also a copy of my "Essay on Curries; their healthful and medicinal properties, and importance in various points of view; and Doctors Paris and Combe, and the celebrated French physicians Laennec, M. Barras, and Broussais, on diet and indigestion:" by the acceptance of which you will confer a particular favour and I shall be much obliged, hoping that one and all may prove useful or amusing.

The observation in your note of the 6th with regard to "having for some years been of opinion that the substitution of curry in lieu of peas would be attended with beneficial effects in H. M.'s navy; and had you returned to a tropical climate in charge of a surveying expedition it was your intention to propose it to the Lords of the Admiralty," must I presume be in allusion to its use in soup. In that respect I agree with you, and would recommend rice instead of peas, which are too flatulent, and generate gas. I have, for many years, been convinced that an excellent "*beef curry*," preserved in tin, might with great advantage be introduced for use in the navy. I have, therefore, had the pleasure to forward to you a sample of what I have contemplated. It eats fine cold, as well as when warmed. There is neither bone nor fat: six ounces warmed, and a quarter of a pound of rice boiled nice and dry, would be as much as any man could manage. Four ounces warmed in half a pint of water, gives a basin of excellent mulligatawny or soup.

From Captain Parry's journal we learn that the breaking out of the scurvy greatly depressed the spirits of the officers and men, and that after twenty-seven months, it was one of the principal causes of abandoning further enterprise; Captain Lyons stating to Captain Parry that he considered the health of the crew "of most importance in every point of view." The medical officers report it to have proceeded "from the peculiarity of the climate and service slowly effecting a serious decay in the constitutional powers of the officers, marines, and seamen; from long continuance on one particular diet—almost total deprivation of fresh animal and vegetable food for above [illegible] years, and the necessary close confinement for several months of each severe winter, undoubtedly causing the general alteration of constitution," with "every appearance of an

increase of sickness;" and therefore, that "the *Fury* and *Hecla* passing a third winter in that country, would be extremely hazardous, and probably be attended with very serious consequences, after the general alteration of constitution which had taken place in the officers, marines, and seamen." It also appears that Mr. Fife, the Greenland master of the *Hecla*, had died of scurvy, "in a state of extreme debility, almost without pain," and that he had taken so great a dislike to the various anti-scorbutic remedies which were administered to him, that he could seldom be induced to take any of them."

It was facts such as these, presumed to be well remembered, which induced me to obtrude myself upon the attention of the Admiralty; and I cannot but think that, under similar circumstances, curries would be highly useful, and prove to be a powerful anti-scorbutic. It is evident that the "kind of diet" in use, however excellent of its sort, was, from its deficiency of nutriment, or exciting power to preserve health, the chief cause of the "*constitutional decay*" which had been "observed for many months before the scurvy broke out." It also now appears that the same evil, arising from the same cause, has occurred in the *Plover*, after being only seven months in the ice. It would therefore seem manifest that to prevent a recurrence of such sad disasters, a more nutritious and invigorating diet is necessary. This can alone be found in what I call a good Indian curry; but certainly not by the use of the materials generally sold for making of the dish. The aromatics strengthen the tone of the stomach, and very materially aids "*the all mysterious process of digestion.*" Hence it is why aromatics are much used in medicine, but certainly with but a very imperfect knowledge of the extent of their powers for the preservation of health or the prevention and cure of disease.

Now, sir, I will wish you farewell. May Providence protect you your officers and crew through your perilous voyage, and crown the object of your praiseworthy exertions with complete success, and speedily restore you safe to your native land and friends!—I remain, sir, yours obliged and truly,

W. White.

To Captain Collinson,
&c. &c.

Captain Collinson to Captain White.

Captain Collinson returns his sincere thanks for the kind and useful present Captain White has sent him, and although he feels very grateful now, has not a doubt but what he will be more so, after experiencing a comfortable repast after a hard day's work in the Polar Regions.

H. M. S. *Enterprise*, Greenhithe,
January 10th, 1850.

Captain WHITE to Captain COLLINSON.

Islington, January 14, 1850.

SIR,—Many thanks for your very kind and flattering note, and I sincerely hope that after "reserving the paste for some period of great exertion," you may not be disappointed in your expectations of a "comfortable repast" from it "after a hard day's work in the Polar Regions."

I must beg of you to believe that you are under no obligation to me for so paltry a present; and which would not have been made so small but that I was apprehensive that if it was larger its acceptance might prove to be irksome. The only value it can possibly have, is the utility it may possibly prove when you are in those frightful regions of ice and snow.

Finding that you touch at Devonport, I have availed myself of the opportunity of forwarding to you that which may probably be of much importance in case of the scurvy attacking the crew.

In my letter of the 9th I alluded to the effects which the scurvy had upon Captain Parry's officers and crew. That circumstance has induced me to direct my attention to endeavour to supply you with such information as I think may be the means of preventing a similar catastrophe in future.

At page 57 of "The Evils of Quarantine Laws," &c., you will perceive the great difference of opinion which prevailed before a committee of the House of Commons as to the treatment of scurvy, between the highest medical officers of the navy, Sir William Blane and Dr. Baird, and other physicians of great eminence, such as Dr. Charles Maclean, and Drs. Roget and Latham.* The two former avowed that

* During the Milbank pestilence of 1823—a mixture of scurvy and dysentery,—the disputes ran so high between the medical authorities as to the treatment, by Drs. Latham and Roget of it with calomel, that a committee of the House of Commons was appointed to examine medical authorities upon the practice, the mortality having been dreadful, and some of the doctors imputing it in great measure to the treatment which had been pursued. The Select Committee having asked those two physicians, "Have you any observations to make upon what has been said?" replied, "One word only: after all the hinting, hesitating, and disapproving, the unanimous conviction of my colleague and myself is, that if we had not treated this disease *upon general principles, and that if, in particular, we had not pushed that one remedy of mercury to the full extent to which we have pushed it, every one of the individuals who have been affected with dysentery in the Penitentiary would have inevitably perished.* We have stated it as the result of our observation, that certain dysenteries (and the dysentery of the Penitentiary is one of them) are as actually controlled by mercury as that disease is certainly controlled by it, for which mercury is a reputed specific."

But so completely did the doctors disagree with regard to the use of calomel at the Milbank Penitentiary epidemic, which was "scurvy and dysentery," one of them, Sir William Blane, assumed that "mercury was

they spoke in utter ignorance of the nature of the disease, or of the practice which had been pursued and had proved to be most successful. I have therefore forwarded for your information some exceedingly valuable extracts, cases of scurvy of the most intense form, from a work of the late Dr. Charles Maclean, in which he and other physicians had successfully treated it, in order that, should occasion arise, they may be consulted, I have not a doubt of the success of the practice in every case, if the instructions of the talented doctor are but attended to. Under them, as you will perceive, a captain in the army was enabled to save the whole of a ship's crew in as desperate a condition as could possibly be. Why should not doctors be able to do the same?

I have been the more anxious to send you those extracts because in the *Fury* and *Hecla* the anti-scorbutic particularly relied upon was lime-juice. Whereas it is but an indifferent substitute for the nitric acid, which, if properly administered, seldom fails in the worst cases, and where it does, as it will be seen, mercury and opium always had the effect.

I trust that occasion may never arise to require the use of such remedies; but if it should, I shall be happy to find that this communication has not been without its good use. I would however beg to suggest, that, like the paste, you reserve the information for a period when the doctor's prescriptions may have failed. They will then be better appreciated, and readily attended to.

Once more bidding you adieu, with an anxious desire that every good may attend you,—I remain, Sir, yours truly and much obliged,

W. White.

To Captain Collinson,
&c. &c. .

prejudicial in scurvy, and he would dismiss a medical officer from the navy who should employ it." Dr. Baird, another naval medical witness, also declared that "he had never heard or read of the practice, and he would do the same."

"Now, if they had never heard or read of the practice, they never could have known the *scientific* application of mercury in that disease to be followed by failure, or to be absolutely productive of mischief. Then, upon what grounds could their *priori* objections to the practice be maintained? With what assurance and face of brass could they dare venture to *dismiss a surgeon*, who should successfully use a powerful medicine the valuable properties of which they were themselves, by their own admission, unhappily ignorant of."

"Dr. Maclean proved, in the year 1796, the utility of calomel in dysentery. It is forty-seven years since it was discovered, thirteen since the Board from the College of Physicians were at last obliged to admit that it "had been very successfully adopted in this disease" in the Penitentiary, yet to this hour they have not adopted or countenanced it. The reason is this, they are totally ignorant of its powers and the scientific principles on which it should be employed."—*Captain White's Evils of Quarantine Laws, &c.*

By Captain Collinson's notes it would appear tolerably clear, that had the Lords of the Admiralty condescended to have consulted him as to the supplying of the proposed material for the expedition under his command, he would have recommended its use; and, in all probability, now that he may be in a perilous position in the Arctic regions, avowedly with the scurvy on board, he regrets the want of its "nutritious and comforting qualities" for general use amongst his crew. It is not for Captain White to call in question the propriety of the decision to which their lordship's had come to, but he may be permitted to observe, that the subject of his communication seemed to have required more consideration than it met with. Indeed, the very sailing orders of the Admiralty to Captain Collinson would point out the importance which attached to the suggestion, or to any remedy that afforded a prospect of preventing scurvy in the crew. The *Plover*, after having been but seven months in the Arctic seas, had then just returned to the Sandwich Islands, with the crew much affected by the scurvy. Their lordships, therefore, "considering the nature of the service on which the *Plover* will already have been employed, and that a portion of the crew may be *unfit* to contend with the rigours of a further stay in those latitudes," directed Captain Collinson "to call for volunteers from that ship and *Herald*, to form a crew for the *Plover*, and the remainder necessary to make up the crew to be made from the *Enterprise* and the *Investigator*." This was accordingly done; and we now find that the *Plover* has again for a second time returned to the Sandwich Islands, with the scurvy on board; and that the *Dædalus* assisted her again by removing the men with the scurvy, and replenishing her with some of her own crew. The *Enterprise* and *Investigator* were "equipped for the Polar climate with warm-air apparatus." This was all very well for the lungs and skin; but surely, when "considering the nature of the service" in which they were to be "employed," some "warm apparatus" for the stomach and the belly might also as well have been supplied.

Upon the occasion of the fitting out of the expedition under the command of Captain Austin Captain White thought it expedient to transmit to the gallant commander a copy of the correspondence which had taken place with the Lords of the Admiralty and Captain Collinson, in order that, if he thought fit, he might have the opportunity of securing some of the material for his own use. It was accompanied with a jar of the curried beef, as presented to Captain Collinson, and in a day or two a jar of the paste. The same etiquette was observed to Captain Ommanney.

H. M. S. *Resolute*, Woolwich,
20th March 1850.

My dear Sir,—I am directed by Captain Austin to request you to accept his warmest and best thanks for your very kind and acceptable present; the properties of which he is anxious to take an early opportunity of testing.

Captain Austin desires me also to say, that as the dietary of the expedition now fitting out under his command has been already fixed upon and ordered, he does not feel himself justified in recommending any alteration or addition thereto.—I have the honour to be, Sir, your obedient servant,

James Priggs, *R.N.*

To Captain White,
&c. &c.

With the "*dietary*" so "fixed," there was a large supply of smashed apples and lime-juice intended as a new anti-scorbutic —Captain Collinson had also been supplied with the same. But it does not, however, appear to have been very potent, as the *Enterprise*, *Resolute*, *Assistance*, and, for aught we know, the *Investigator*, have all suffered from the scurvy; and, as far as smashed apples go, we may safely say that it never will prevent or have any decided effect in checking it.

H. M. S. *Assistance*, Woolwich,
15th March 1850.

Captain Ommanney presents his compliments to Captain White, and begs to express his thanks for the present of curry paste which has been so kindly forwarded to him, and hopes soon to try its good qualities, which he will report upon.

To Captain White,
&c. &c.

Captain White having forwarded to the care of Mr. Sloman of the "Ship" at Woolwich the jars of curried beef and paste for Captains Austin and Ommanney, the latter being residing at his house, Captain White was somewhat surprised by a note to find Captain Collinson acknowledge the receipt of the paste, and no notice taken of the beef which was sent as a sample of what had been submitted to Captain Collinson, in answer to his observation that "curry might be introduced with advantage into H. M.'s ships," a note was written to Captain Collinson expressing a hope that it had been received safe, and the following was the reply :—

H. M. S. *Assistance*, Woolwich,
10th April 1850.

Dear Sir,—I have given your curry paste a further trial, which proves very palatable and satisfactory, I shall therefore thank you to forward me eighteen pots for my sea-stock.

The curried beef which you spoke of I have never seen.

Should you favour me with another specimen, I shall be happy to give it a trial.—I remain, yours truly,

ERAS. OMMANNEY.

To Captain White.

To Mr. SLOMAN of the "SHIP," at Woolwich.

Islington, April 17th, 1850.

SIR,—I have been much surprised by a note which I have received from Captain Ommanney, H. M.'s ship *Assistance*, by which it appears that the jar of curried beef which was transmitted to you on the 8th of March, accompanied by a note requesting that you would present it to that officer with my respectful compliments, has not been received. Captain Ommanney in that note says,—"with regard to the curried beef which you speak of, I have not seen; and should you favour me with another specimen I shall be happy to give it a trial."

I must beg that you will have the goodness, by return of post, to afford me an explanation of the affair.—Sir, I am your obedient servant,

W. WHITE.

Mr. SLOMAN to Captain WHITE.

Ship Hotel.

SIR,—I cannot see by what right or reason such a note as I received this day from you should be wrote; for, whatever parcels you sent here, whoever they were for, to them they were sent as soon as the addresses of those gentlemen were known. Captain Ommanney was staying with me for a few days till his lady came down, then he went into lodgings, and to those lodgings I sent whatever was received here for him; and the parcels for Captain Austin I was advised to keep till he came to Woolwich; and as soon as I knew that gentleman's address here, to him I sent your parcels, so I cannot really see any sufficient excuse for your writing to me in the terms of the note of this day.—I am, sir, your obedient servant,

WILLIAM SLOMAN.

To Captain White,
&c. &c.

Captain WHITE to Mr. SLOMAN.

Islington, April 27th, 1850.

SIR,—Your note, without date, post-mark the 18th, has been received, and it is very unsatisfactory. There is but one "parcel," the delivery of which is called in question; and that is the "curried beef."

It can be proved that it was delivered to you on the evening of the 8th of March. It was accompanied with a note of that date, in reply to one of yours of the same day, in which you

say, "we are full of *ardent spirits*; and *real good* fellows they are. I should wish you to come down, and spend an evening with those jolly 'North Polars,' who, no doubt, would appreciate your splendid 'curry.' Captain Ommanney is here, and his lady is about to join him here next week."

It was the circumstance of Captain Ommanney residing at your house, that induced me to send the present of the three-pound jar of "curried beef," for the jolly "North Polar" through your hands, with a hope that he would have had an opportunity of testing its "excellent quality." I was the more incited to do so as in that note you say, "only bear in mind captain, that you may safely reckon on my assistance in making known the excellency of your discovery."

It is seen by your notes that Captain Ommanney was residing at your house on the 8th of March, and that he continued to do so until after the 15th. In your note of the 20th of April you say, "Captain Ommanney was staying with me for a few days until his lady came down; he then went into lodgings, and to those lodgings I sent whatever was received for him here."

The 8th of March was on a Monday. When Captain Ommanney's lady "came down" "next week," it could not have been earlier than Monday the 15th. Thus, by your own shewing, he was residing at your house for at least a week after the present was delivered to you.

In a note of the 15th of March Captain Ommanney acknowledged the receipt of a "present of a jar of curry paste." It had been transmitted *directed* to him at your house, subsequent to the forwarding of the jar of beef. As in it he had taken no notice of the receipt of the latter, on my replying to the note I expressed a hope that it had been received safe. On the 16th of April, his reply is, "*the curried beef of which you spoke I have never seen*"!

From these facts it is clear that although Captain Ommanney was residing at your house when the present was received it was not delivered to him; and, equally so, that it was "not after he went into lodgings *to those lodgings sent.*"

It is under circumstances such as these that you tell me, you "*cannot see by what right or reason*" I "beg of you to afford me an explanation of the matter," as you "*cannot see a sufficient excuse*" for my having done so. It is certainly a very effrontory way of dismissing the subject; but it will not do. I call upon you for a better explanation than that which you have sent; and also to unriddle your inconsistencies. It is imperative since you have endeavoured, and not in a very creditable manner, to extenuate yourself by calling in question the veracity of Captain Ommanney, by indicating that he must have received a present which he declares he has "never seen"!

I consider that you have treated both Captain Ommanney and

myself very ill, and that without "any *sufficient excuse*." Previous to the 8th of March, I had presented you with a pint jar of the paste and a jar of the curried beef, for which you returned your "best thanks." Subsequently, by your own invitation, I "relied upon you"; and what has been the result? I have sustained injury and loss by your conduct; and Captain Ommanney is gone to sea without articles which he otherwise would have had.

A copy of the correspondence has been forwarded to that officer; and upon the reply that may be sent to this, my future proceedings will depend.—Sir, yours obediently,

W. White.

To Mr. Sloman,
Ship Hotel, Woolwich.

Copies of Captain White's note and Mr. Sloman's reply being forwarded to Captain Ommanney, the following was the reply:—

H. M. S. *Assistance*, Woolwich,
23rd April 1850.

Dear Sir,—I regret you should have taken so much trouble about the jar of curried beef. It is to be hoped that it fell into the hands of the "jolly North Polar fellows," who will appreciate its merits.

I shall thank you to forward twelve pots of the paste, similar to that you sent as a specimen, and twelve jars of the curried beef, the same size that you sent me.

They should be here if possible to-morrow, as we leave on Thursday.—I remain, yours truly,

Eras. Ommanney.

To Captain White,
&c. &c.

Captain White to Captain Sir John Ross, C.B.

Islington, March 9th, 1850.

Sir,—Considering the great experience which you have had in the Polar seas, and the probability of your again proceeding there, I have been induced, although a stranger, to take the liberty of addressing you upon a subject which may not be altogether unacceptable, as it is connected with the comforts, welfare, and the health of officers and crews of ships destined to explore the Arctic seas in search of Sir John Franklin and crew.

Herewith I have the honour to forward, for your obliging perusal, a copy of a correspondence which has taken place between the Lords of the Admiralty, Captain Collinson, and myself, upon the use of curry in the exploring ships as an occasional more stimulating and invigorating diet for the officers and crew; as also probably efficacious as an anti-scorbutic—a disease from which former expeditions have suffered much.

Debility, extreme debility, is the prominent feature of the scurvy. "Rejecting diseases of indirect debility and excessive excitement," says the late celebrated Dr. Charles Maclean, "facts and inferences shew the reception of only one class of morbid affections which consist on deficient excitement, and to be cured by a proportional increase of the action of the exciting powers."

The scurvy in the *Fury* and *Hecla*, which is animadverted upon in my letter to Captain Collinson, in the first place is ascribed to "the long continuance on one particular diet," as the principal cause of producing the "serious decay in the constitutional powers of the officers, marines, and seamen;" and in the second, to "the peculiarity of the climate and service" in the Arctic seas.

The scurvy, the epidemic of the sea, has frequently appeared in various climates, hot and cold, and in the extreme seasons of the year. "Epidemic and pestilential diseases," says Dr. Charles Maclean, "are produced by the diminished exciting powers of the atmosphere, comprehending all the intermediate degrees of affection between the slightest catarrh and the most destructive pestilence,—to which diminished exciting power is always superadded the influence of heat and moisture, soil and situation, food and water, corporeal labour, the passions and emotions of the mind."

In this short sentence we have a truly philosophic explanation of the concurrent causes which produced the scurvy in Commodore Anson's fleet, round Cape Horn and the South seas, as also in the *Fury* and *Hecla* in the Arctic. It shews that under similar circumstances the disease would again appear. It also shews that "the continuance on one particular diet" could only have been so far an auxiliary in producing the disease, or the "gradual and serious decay of the constitutional powers of the officers, marines, and seamen," in as far as that it was deficient in "nutriment," or "exciting power," to resist the effects of the "diminished exciting powers of the atmosphere;" and it demonstrates that a more stimulating and invigorating diet was required. "When a patient is weak," says Dr. Maclean, "he not only requires a greater sum of exciting power, but provided that applied be the proper kind, and adequate in degree, and its action duly supported, it will give him a constant acquisition of strength."

Mr. Fife, the Greenland master of the *Hecla*, as will be seen by my letter to Captain Collinson, had been for several weeks "in a state of extreme debility, almost without pain," and he had taken so great a dislike to the various anti-scorbutic remedies which were administered to him, that he could seldom be induced to take any of them," and for the "three weeks previous to his death, the debility continued to increase."

Here we have a case which "consisted in deficient excitement," and which was required "to be cured by a proportionate increase of the action of the exciting powers." The "*exciting powers*," or remedies, applied in this instance, were either not "*proper in kind*," or, if "*proper in kind*," not "*adequate in degree*," or their "*action duly supported;*" for the patient, instead of "*acquiring a constant acquisition of strength*," became weaker every day until such time as death terminated his miserable existence.

This case of Mr. Fife affords a practical illustration of the correctness of Dr. Maclean's remark, that "it is in duly apportioning the sum, or allotting the kind of remedial powers to the sum of disease and the nature of the organs affected, that medical skill may be said almost wholly to exist."

The question then is, in the scurvy what are the "*proper kind*" of "exciting powers" to be applied in order to resist a "disease produced by the diminished exciting powers of the atmosphere." It is generally admitted that diet has much to do in the production of scurvy. It would therefore follow, that whenever there is a tendency to that disease, the exciting properties of the food ought to be regulated to the highest possible standard compatible with health, in order, by those means, to resist the baneful effects of the "diminished exciting power of the atmosphere, to which is superadded the influence of heat, cold, moisture, food, and water, corporeal labour, the passions and emotions of the mind," so "*peculiar to the climate and service*" in the Arctic seas.

It will be remembered that, during the cholera of 1849, the General Board of Health prohibited the use of "cabbages," "fruit, though dried," "salt meats," and "&c.," as calculated to produce the disease; and that the Royal College of Physicians, "considering that the public would naturally, on that occasion, look to them for advice," exhorted them to the use of the articles so condemned, "as with most persons a proportion of those articles were necessary for the preservation of health," and that "nothing promotes the spread of epidemics so much as the want of nutriment to fall into that ill condition which, in its highest degree, is called scurvy."

It would be out of place here to comment upon so disgraceful a collision at such a period between two such important public bodies, or to point out what evils it may have produced; but if such high authorities as the Royal College of Physicians admit, that the want of "*nutriment*" in food "promotes the spread of epidemics," and "induces to fall into that ill condition which, in its highest degree, is called scurvy," it will be clear that the food taken into the Arctic seas should possess all the "*nutriment*" possible to resist the baneful effects of the "peculiarity of the climate and service." And, for this purpose, we may ask, what food would be so appropriate and proper as a

good "beef curry" with some rice. A "beef curry" made as that presented to Captain Collinson by me, a jar of which I have now the honour of forwarding for trial by you, possesses the highest possible degree of nutriment and exciting power capable of being introduced into food. While the rice, which should always be eaten with it, possesses the valuable twofold properties of vegetable and bread, and the mild bland mucilage with which it abounds, shields the stomach and intestines from acrimonious humours. Matters of no small importance to sailors in the Arctic seas.

"The reappearance of the scurvy" on board the *Hecla* and the *Fury*, "in the most favourable month of the year," after being but twenty-seven months at sea, with eighteen months provision still on board, evidently demonstrated the necessity of a more stimulating and invigorating diet. It was in this dilemma that Captain Lyons told Captain Parry, "I consider the health of your crew most important, in every point of view." An axiom that must ever hold good at sea, and proves that too much attention cannot be paid to the food; especially so in the Arctic seas.

I trust that I shall be pardoned obtruding so long upon your time and attention a subject which your great experience enables you to form a correct opinion upon. I may be right—and I do not think that I am wrong in my conclusion—that as an occasional diet, and under extraordinary circumstances, the ships of the royal and mercantile navies require for the maintenance of health, a more stimulating and invigorating diet than has hitherto been in use.

As well as the jar of "curried beef," I have the honour to forward for your obliging acceptance and trial, a jar of the curry or mulligatawny paste, as presented to the Lords of the Admiralty and Captain Collinson.

With regard to the use of lime-juice as an anti-scorbutic facts and circumstances have induced me to believe that too much reliance has been placed upon it, and that more efficient remedies might be found. I have considered the subject well, and for the sake of humanity I have tried to make one out. Considering what you and your people may hereafter have to endure from so implacable a foe, I have invented for your use, if upon trial you should approve of it, a new anti-scorbutic acid, which, from its peculiar component parts, I have every reason to hope that it would prove far more efficacious than the lime-juice. I have, therefore, the honour to forward a small bottle of it for an obliging examination by you.

With many apologies for this extremely lengthy communication, which I trust that the importance of the interests at stake may seem to excuse, I shall be very much gratified to find that it has not given offence, or proved to be altogether

unacceptable to you.—I have the honour to be, sir, your most obedient servant,

W. White,
Late Captain H. E. C.'s Bengal Army.

To Captain Sir John Ross, R.N., C.B.,
&c. &c.

Captain Sir John Ross, R.N., C.B., to Captain White.

267 Strand, 18th March, 1850.

My dear Sir,—I have to acknowledge, with many thanks, your communication of the 9th instant, and enclosures containing your correspondence with the Admiralty and Captain Collinson, which could not be but deeply interesting to me, particularly so as I am about to proceed on a voyage wherein the information thus afforded may be of infinite service.

It is true that, having been employed on services where the health of the crew was of more than ordinary importance, my attention has long been called to the subject, and I have ascertained, beyond all doubt, that the *great secret* for the preservation of health, is to vary the diet as much as possible, that is, not to live many days without a change. I have known even ships at Spithead, [illegible] on fresh beef and vegetables, attacked with scurvy, which disappeared when a change of salt meat was given. I am not of opinion that the atmosphere has anything to do with disease. The Esquimaux lives entirely on animal food, and the scurvy is unknown amongst them, although they have neither vegetable nor farinaceous food; and this I attribute to the quantity of animal oil which they consume, and which acts on the bowels in the same way that vegetable food does with us. I have found that lime-juice, with sugar, is a *preventive* but not a *cure* for the scurvy; and I consider any acid, which, by any chemical process, is deprived of its nutritious, is also deprived of its anti-scorbutic qualities. In the year 1795, I was fifth mate of the *Queen* East Indiaman. We had a most tedious passage from Bengal, and out of 105 men, fifteen had perished with the scurvy. On arriving at St. Helena, those who were very badly affected, twenty-eight in number, were carried on shore, and buried in earth up to their chin, and fed on water-cresses, and it was astonishing to see how wonderfully they recovered, not one of them died.

The absence of scurvy among the natives of India is attributed (and I believe justly) to the universal use of *curry*, which, by stimulating the digestive organs, must be very conducive to health, and I have no doubt that the curry paste produced at your manufactory, which is certainly much superior to any that I have met with, must have a most salutary effect, and I would strongly recommend that a considerable proportion should be supplied. Nothing could be better than the *beef curry* you were so kind as to send me to report upon, and

which I received when I had a party of friends, and who were unanimous as to its excellent flavour and quality.

If the acid you sent me has not gone through a chemical process, which could destroy its nutritious or anti-scorbutic qualities, it will also be a great advantage to the navy, especially if not more expensive than lime-juice. It is much more palatable, and its acidity being moderate, it cannot have an injurious effect on the constitution.

With regard to the cure of the disease, there is, I believe, none in which there is so complete a difference of opinion; and it is possible that all may be right in some cases, of which there is indeed a great variety; but I believe that when it has attacked the heart, there is little hope for the patient. The practice of giving opium and calomel, I believe to be peculiar to Dr. Maclean, and I think may very probably be the most effectual.

I beg to return you my best thanks for your valuable communication on this interesting subject, and I remain with truth and regard, dear sir, your very humble servant,

JOHN ROSS.

To Captain White,
&c. &c.

Captain Sir JOHN ROSS to Captain WHITE.

P. M. 18th March 1850.

DEAR SIR,—I had finished the report you will receive herewith, when your kind note of this day's date arrived, with the second specimen of your anti-scorbutic *acid*, which I have also tried, and find agreeable to the taste, though a little more piquante than the former. If the liquid has gone through no chemical process which could destroy the nutritious and anti-scorbutic qualities, there can be no doubt it would be superior to lime-juice, as being less severe on the constitution, and less liable to injure the coats of the stomach. It is well-known that the powders for making lemonade, sold in the shops, have no effect in preventing scurvy, from its *anti-scorbutic* qualities being annihilated in the chemical process of its production. But if the ingredients of which your acid is made are in their original state, there can be no doubt but its use will be effectual.

I am not yet in a position to give you an order for the supply, but when I am you shall hear from me. I am sure that Captain Austin will be as desirous as I am to give your inventions a fair trial; and if we have an opportunity, there can be no doubt that you will have a full and fair report from us both. I again entreat you to accept of my best thanks, and I remain, very faithfully, dear sir, your very humble servant,

JOHN ROSS, Captain, R.N.

To Captain White,
&c. &c.

Captain White to Sir John Ross, R.N., C.B.

Islington, March 28th, 1850.

My dear Sir,—I have with much pleasure to acknowledge the receipt of your kind and valuable "Report on Curries," for which I request that you will accept of my most sincere thanks, and for the trouble which you have taken to peruse my letter of the 9th instant and the documents which accompanied it.

It is extremely gratifying to find that the correspondence with the Lords of the Admiralty and Captain Collinson proved to be "deeply interesting" to you; and that, in event of your "proceeding on a voyage to the Arctic seas, the information" thus afforded "may be of infinite service to you."

"To vary the diet as much as possible," I believe with you, is one of the "great secrets for preserving of health." You state that you "have known even ships at Spithead, living upon fresh beef and vegetables, attacked with scurvy, which disappeared when a change of salt meat was given."

To salt provisions has usually been ascribed the cause of scurvy. The precedent you refer to would reverse the order of things. But it is not the only instance with plenty of fresh provisions on board that the scurvy has raged even unchecked by salted meat, of which, it is presumed, they had plenty on board. It was the case in Commodore Anson's fleet in the South Seas, and also in the *Fury* and *Hecla* in the Arctic seas.

You state that you are "not of opinion that the atmosphere has anything to do with the scurvy," the epidemic of the sea; and the reason which you offer in confirmation of it is, that "the Esquimaux live entirely on animal food, and the scurvy is unknown among them, although they have neither vegetable nor farinaceous food;" and you "attribute it to the quantity of animal oil which they consume."

Those observations are, I presume, intended to be applied to the opinion which I have quoted from Dr. Charles Maclean, that "all epidemic and pestilential diseases are produced by the diminished exciting power of the atmosphere."

It is of little or no consequence whatsoever why the scurvy is "unknown among the Esquimaux." It is sufficient that the crew of the *Fury* and *Hecla* were attacked by it in a severe epidemic form; that it compelled the abandonment of the expedition; and that the surgeons of those ships declared it to proceed from the "peculiarity of the climate;" and, moreover, it will be pretty clear that British sailors could not live in the Arctic regions, like the Esquimaux, on "*animal oil.*"

Hippocrates, the father of physic, and the most celebrated

ancient and modern physicians, attributed all epidemics to proceed from the state of the atmosphere. The philanthropic Dr. Arbuthnot affirms that "there are no changes in human bodies known, but are produced by the contents, properties, and qualities which, we are assured, the air is endued with, especially by the great enormities and sudden successions and alterations."

The destruction of Anson's fleet by the scurvy was evidently brought about by "the great enormities and sudden successions and alterations, contents, properties, and qualities of the air." It broke out twice, at two distinct seasons of the year, winter and summer; in different climates, the one warm, the other cold. The talented historian, Walker, the chaplain of the fleet, records it:—"We opened the straits Le Marie at 10 A.M. on the 7th of March 1741, in excellent health and spirits, with fine weather and a brisk gale; and were hurried through by the rapidity of the tide in about two hours, though they are seven or eight leagues long. The brightness of the sky, and the serenity of the weather was indeed most remarkably pleasing; for though the winter was advancing apace, yet the morning of this day, in its brilliance and mildness, gave place to none we had seen since our departure from England. * * We had scarcely reached the southern extremity of the straits of Le Marie, when our flattering hopes were instantly lost in the apprehension of immediate danger. For, before the foremost ships of the squadron were clear of the straits, the serenity of the sky was suddenly changed, and gave all the presage of an impending storm. The wind shifted to the southward, and blew in violent squalls." This was "followed by a succession of violent gales, such as the oldest and most experienced mariners on board had never witnessed. Soon after passing the straits, the scurvy made its appearance."

From this it would appear to be clear, that "the great enormities, and sudden successions and alterations, contents, properties, and qualities of the air," was the immediate cause which in that instance produced the scurvy. According to the learned historian, by the end of August 1741, the *Centurion* had lost two hundred and ninety-two seamen, and out of one hundred and twenty-six marines but four remained alive! The *Gloucester*, another of the squadron, with a much smaller crew, had also buried two hundred and ninety seamen, and forty-six marines out of forty-eight. The *Trial*, out of her complement of eighty, had buried forty-two. Thus those three ships, which, on their departure from England, had nine hundred and sixty-one men on board, from the period when they passed the straits of Le Marie, the 7th of March, had lost six hundred and twenty-six men.

The frightful ravages of the disease upon that ill-fated

expedition did not end there. By the middle of Sept. 1741, the survivors were again in good health, and on the 19th the three ships left Juan Fernandez. In May 1742, when they were leaving the coast of Mexico, they again encountered a succession of storms; the *Gloucester* and *Trial* had been rendered unseaworthy, and were both sunk. By the 28th of August 1742, when they arrived at Tinian, "all the hands," says Walker, "they could muster, capable of standing to a gun, of the united crews of the *Centurion*, *Gloucester*, and *Trial*, which consisted altogether, when we departed from England, of near a thousand souls, including some negro and Indian prisoners, amounted to seventy-one, most of which number too were incapable of duty." Of this second attack, the historian makes the following important remarks:—

"Some of us were at first willing to believe that in this warm climate, so different to what we felt in passing round Cape Horn, the violence of this disease, and its fatality, might in some degree be mitigated, as it has not been unusual to suppose, that its particular virulence in that passage was in a great measure owing to the severity of the weather. But the havoc of this distemper in our present circumstances soon convinced us of the falsity of this speculation, as it likewise exploded some other opinions, which usually pass current about the cause and nature of this disease. It has generally been presumed, that plenty of fresh provisions, and of water, are effectual preventions of this malady. In this instance, we had a considerable stock of fresh provisions on board, as hogs and fowls, and we every day caught great abundance of fish; and each man had five pints of water a day. Yet neither were the sick thereby relieved, nor the progress of the disease retarded. It has been esteemed that to keep ships clean and airy between decks as much as possible would prevent the appearance of scurvy, or at least mitigate its effects. We kept all our ports open, and took all pains in cleansing and sweetening the ships, yet neither the progress nor the virulence of the disease were thereby sensibly abated."

From this we collect the important truths, that climate, heat or cold, the presence or absence of fresh provisions, is not the great remote cause of the scurvy at sea, although influenced by them; but that, like the epidemics of the land, it depends upon a peculiar state of the atmosphere, capable of giving rise to it, and according to its degree will be the intensity of the disease.

The disease has appeared under every variety of circumstance, latitudes, and seasons of the year; and this forcibly brings to our consideration the importance of the observation of Dr. Charles Maclean, that "of the qualities of the air upon which those maladies depend, we are ignorant, excepting as they manifest themselves in their effects, and if we had at all

times the means of ascertaining, it would be of little use unless we could have, at the same time, the power of remedying them." The learned doctor also observes:—"The causes of epidemic diseases, in common with other diseases, is an undue or diminished action of certain exciting powers upon the organs particularly affected. The principal exciting power is, in this case, the atmospheric air. If the cause of any effect be that without which it cannot be produced, and if epidemic diseases never arise but in a noxious atmosphere, it follows that a noxious atmosphere must be the cause of those maladies. There can nothing else be necessary.

"The experience of the years 1849, 1850, and 1851, establishes that axiom. The Thames, 'the polluted Thames,' grave-yards, drains and sewers, could not, in the same seasons, in one year be a source of pestilence and death, and for two succeeding years become a fountain of health."

"Whatever," says Dr. Maclean,* "be the precise nature of those changes in the properties of the air, by which epidemic affections are produced, as all diseases are the result of diminished excitation, it is competent to infer that, in this instance, the effect is produced entirely in consequence of a diminution of the exciting power of the vital element. This change may consist of a diminished exciting power of the air in its ordinary state, or when that power has previously been unusually augmented. Hence, in the production of pestilences, an importance is justly attributed to unusual vicissitudes of the atmosphere. From every record of epidemic and pestilential diseases, it appears that they have their stated seasons of recurrence; that those seasons are such months as are most remarkable for vicissitudes of the atmosphere; that they become general only in years when those vicissitudes are extreme; that they do not occur in seasons when the degrees of heat or cold, however intense, are equable, nor in years when the state of the atmosphere remains temperate throughout, and that they uniformly cease with the establishment of an equable state of the atmosphere, whether the weather be hot or cold."

"Although there can be no doubt that, from the improved condition of societies in modern times, a more highly noxious state of the atmosphere is necessary to produce the same degree of disease, and that plagues will, consequently, continue to be much less frequent than formerly in civilized countries, yet it cannot reasonably be inferred, either that they will remain exempt from them, or that, when they do occur, the mortality will not be as great as formerly."

How prophetic were those forebodings, and how amply were they verified in the years 1848 and 1849! There had

* Dissertation on the Source of Epidemics and Pestilential Diseases, 1796.

been no epidemic of an intense form since the Great Plague of London; for, although in 1832 the country suffered much from cholera, the atmosphere was not sufficiently impure to raise a pestilence. Yet, in 1832, the metropolis was in a far more crowded and filthy state than in 1849, with Fleet Market, Saffron-hill, St. Giles's, &c.

> "The all surrounding heaven, the vital air,
> Is big with death; and though the putrid south
> Be shut, though no convulsive agony
> Shakes from the deep foundation of the world
> The imprisoned plagues, a secret venom oft
> Corrupts the air, the water, and the land."
>
> *Science of Life.*

It is a curious circumstance which you mention as having happened in the *Queen* East Indiaman in 1795, when you were a midshipman, on her voyage from Bengal to St. Helena. You state that you had had "a most tedious passage" to the island, no doubt occasioned by storms; and of the crew of 105 men, "fifteen had died of the scurvy, and that seventy were still laid up with it on our arrival at that island;" and that then "those who were badly affected (twenty-five in number) were carried on shore, and buried up to the chin in earth, and fed upon water-cresses, and that it was astonishing to see how wonderfully they recovered, and not one of them died."

It is not difficult to conjecture the share which the water-cresses, combined with other causes, may have had in producing the wonderful recovery; but it is not so easy to comprehend what effect the burying them up to the chin could have had in bringing it about. Are we to assume from it, that the earth possesses properties capable of absorption by the pores of the skin; that they are re-vivifying, invigorating, and affording nutriment to the human frame—the same as with plants? I look upon the practice to have been one of those extravagant acts of folly to which the conjectural art of medicine is so prone, without any rational cause capable of being assigned for its adoption, and which has so much disgraced the medical profession, and brought the science into contempt. Of those extravagant acts of folly, we had recently some tolerable proofs during the cholera, with "cold wet sheets" and "boiling hot blankets:" thus employing means of a *diametrically opposite nature* for the cure of the same disease. Just upon the same irrational ground, the pernicious system of blood-letting has been for ages pursued, namely, of "extracting blood," as Dr. Charles Maclean observes, "to have the pleasure of throwing more opium or mercury into the system than otherwise would be necessary. To debilitate, in order to strengthen; to accommodate the state of the patient to the sum of medicine intended to be

given, rather than proportion the sum of medicine to the state of the patient!" that is, when the "patient's excitement is five degrees below the healthy standard," to "lower it five degrees more," that it "may afterwards be raised with greater safety; when it will be required to apply double the force that would at first have been sufficient."

I should rather attribute the recovery of the twenty-five men to the increased "exciting powers of the atmosphere, the influence of soil and situation, food and water, the passions and emotions of the mind," affording to the water-cresses their due. But as to the burying them up to the chin having had any share in producing the effect, it appears very like what Dr. Johnson defines quackery,—"*bad acts in physic!*"

It appears, by Anson's voyages, that when the *Centurion*, after the dreadful ravages which the scurvy had made, reached the island of *San Francisco*, there they "found almost all the vegetables which are usually esteemed to be particularly adapted to the cure of scorbutic disorders, which are contracted by salt diet and long voyages. Here we had," says the historian, "great quantities of water-cresses, &c. which were extremely grateful to our palate, and likewise of the most salutary consequence to our sick in recovering and invigorating them, and of no mean service to us who were well, in destroying the lurking seeds of the scurvy from which, perhaps, none of us were totally exempt, and in refreshing and restoring us to our wonted strength and activity."

But notwithstanding the thus "destroying the lurking seeds of the scurvy," and "restoring them to their wonted strength," on the following year, after leaving the coast of Mexico, the disease again broke out in a frightful form, destroying a further very large portion of the crew. "Those who had continued healthy began to fall down apace, no day passing that they did not bury eight or ten, or sometimes twelve a day." Upon the survivors reaching the island of *Tinian*, there they again found plenty of water-cresses, and there "the diseased received so much benefit from the fruits of the island, particularly those of the acid kind, that in a week's time, there were but few who were not so far recovered as to be able to move about without help."

In those dreadful pestilences we may see the correctness of the conclusions to which all the most celebrated ancient physicians as well as modern, that all epidemics proceed from the air; and that there are no changes in human bodies known, but are produced by the contents, properties, and qualities which we are assured the air is endued with, especially by the great enormities and sudden successions and alterations, "comprehending all the intermediate degrees of affection between the slightest catarrh and the most destructive pestilence,"

occasioned no doubt "by the diminished exciting power of the atmosphere, to which diminished exciting power is always superadded the influence of heat and moisture, soil and situation, food and water, corporeal labour, the passions and emotions of the mind."

It was the circumstances mentioned of the "benefit which had been derived in that ill-fated expedition from fruits of the acid kind," which directed my attention to the construction of the anti-scorbutic acid which I have had the pleasure of presenting to you; and I am sincerely rejoiced to find that you think so well of it. It is made purely of "*fruit*," with a salutary admixture of aromatics of the highest class, and thus rendered "grateful to the palate:" a matter so essential to "invalids," as most physicians will admit. It has gone through no chemical process to impair its "nutritious properties." As for "price," it cost three times that which is called lime-juice. It has been expressly prepared for you; and I shall furnish you with any quantity, without regard to price, being anxious that, if occasion should occur, you may benefit by it.

Your report on curries is gratifying; I am glad that you approve of the curry paste, and think so well of the curried beef. Of course, after the Lords of the Admiralty's refusal "to supply the officers and crew" of Captain Collinson's expedition, I can make no use of your recommendation.

When your departure is fixed, I shall be most happy to present you with a similar case of paste as that I had the pleasure to present to Captain Collinson, and to supply you with anything that I have at cost price.

If I had no occasion to apologize for the length of my former letter, I hope that I have no occasion to do so now, as it has in a great measure been occasioned by some of your own remarks, which seemed to call for a reply. As the former letter proved to be so interesting, I trust that this will be no less so.—Believe me to be, my dear sir, yours, obliged and most truly,

W. White.

To Captain Sir John Ross, R.N., C.B,
&c. &c.

Immediately after the despatch of the foregoing letter, Captain White and Sir John Ross became personally acquainted. Sir John Ross, who at this period was much engaged in organizing his expedition, had more than once occasion to visit Scotland, and had no time, even had it been necessary, to have entered into a reply. The period of his departure having arrived, and being provided with the stores suggested by Captain White, the following concluding letter was addressed:—

Captain W. White to Sir John Ross, R.N., C.B., &c.

Islington, May 14, 1850.

My dear Sir,—I have been confined to my bed ever since the 5th, the day I took a parting leave with you. Although still confined and in great pain, and unable to get up, I have contrived to take such extracts from Dr. Maclean's works as will illustrate the principles upon which that truly great physician and philosopher establishes his doctrine of excitation; and it is accompanied with various cases of scurvy as cured by him.

His remedies for the scurvy are:—1st, nitric acid; 2ndly, calomel and opium. From the cases detailed, it is evident that they are both remedies competent to the cure of the disease in its worst form, though probably, in some instances, from the particular organs which may be affected, the one may prove more adapted than the other; but in no instance should the opium and calomel be resorted to but in cases where the intensity of the disease has baffled the effects of the nitric acid. A case which, in my humble opinion, can rarely occur if the nitric acid is duly applied before the disease has far advanced, or from the neglect of the patient of regularity in taking his medicine.

You will perceive that I have great faith in the nitric acid, and presently I will more fully explain why I was induced to recommend it so strongly to Captain Collinson, and now to yourself. Dr. Charles Maclean appears to have been the first medical man that ever tried it; but it is not clear that it did so upon any definite principles, or with any accurate knowledge of cause and effects. But he was a great physician, and has done more to lay the foundation of a better and more scientific knowledge of pathology, and practice of medicine, than any man who has ever preceded or succeeded him in this world. His works, his labours, his extensive experience, in almost every part of the globe, proves it. If the public have not derived the benefit from them which they might have done, the odium and blame rests upon the apathy and indifference with which colleges of physicians and medical schools look upon all new discoveries; and which, probably, their wounded vanity induces them to treat with contempt. In short, as Dr. Sanders says of the former, "what does not seem to have emanated from these chieftains must—if the whole race of men should perish—be circumspectly suppressed, or strenuously opposed."

In 1795, there appeared two treatises on the scurvy. The one by "Thomas Trotter, M.D., Physician to the Fleet under Admiral Lord Howe," the other by "D. Patterson, surgeon

to H. M. S. *Resolution*, one of the ships which accompanied Vice-Admiral George Murray to America."

Mr. Trotter informs us, that he "tried diluted sulphuric *acid;*" and that "it was continued for a week, during which time the symptoms became worse." That in another case he tried the "concentrated acid of tartar for the same period with no apparent symptoms of recovery," and he died. In another instance he "gave nitre for six days," and "all the symptoms were worse;" the "acetous acid" was then "tried for six more, and on the twelfth day the patient was much worse in all the symptoms of scurvy," and died.

Mr. Patterson's panacea was "two ounces of nitre dissolved in a quart of ship's vinegar," and which he named "*acetum nitrosum;*" and which, from his account, appears to have been "very successful."

By Case X., by Dr. Maclean, it will be perceived, that it was on the 3rd of December 1798, that he "had the first good opportunity to try the effects of the nitric acid," and with what success is to be seen; as also in the numerous other instances in which it was tried.

By this it would appear to be established that Doctor Maclean was the first to use the nitric acid for the scurvy, and that until 1798 its utility for the disease was unknown.

We are not told under what circumstances or principles Doctor Maclean was "resolved to try the nitric acid the first good opportunity," but it is possible that it may have been suggested by Mr. Patterson's success with his "acetum nitrosum," or vinegar and nitre. I will therefore explain the reason why, independent of the doctor's successful practice, I recommend the use of the "*nitric acid*," and feel convinced that it is superior to every other remedy when the disease has fairly taken ground.

The learned and ingenious Professor J. J. Plank, M.D., of Vienna, towards the end of the last century, in his work "*Hygralogia Corpous Humani*," lays it down:—

"The elementary principles of our body hitherto known are, 1. *azot*, an element which, combined with hydrogen, constitutes *volatile* alkalies; with the matter of heat, azotic gas; with carbon, the gluten of animal fibres.

"Azot is the primary element of the animal body, for it may be procured from almost every part of the animal by means of the nitrous acid, this having a greater affinity with the elements than the azot itself. The mucus, jelly, membranes, tendons, ligaments, and cartilages, afford it in a less degree by means of the nitrous acid. The lymph, serum of the blood (*its vital part*), the water in dropsies, the liquor amnii, and cheese afford more."

The fact that the "*nitrous acid having a greater affinity*" with

the "elements of the animal body than the azot itself," fully explains why it must be superior to any remedy that can be found, and demonstrates why Dr. Maclean was so successful in its use. It also shews that the failure of the "diluted sulphuric acid," "concentrated acid of tartar," and "acetous acid," was, from their having no "affinity with the elementary principles of the body," and which may be considered as demonstrated by the partial success which attended the administration of the "nitrous vinegar." Why its success was but partial is explained. The vinegar does not possess the power of decomposing the nitre, but vitriolic acid does, and when thus dissolved it is called "*Nitric Acid.*"

In regard to his remedies of "mercury and opium," Dr. Maclean says, "no exclusive virtues are however attributed to them. It is not supposed that any agent has an exclusive power of curing any disease; although some agents are more proper than others, there are undoubtedly some, and probably many remedies, if not equally, at least sufficiently appropriate."

From this, it appears to me that when the learned doctor was using the "*nitric acid,*" he could not have been aware of its great "affinity" with "the elements of the animal body." Otherwise, how is it possible, after its "uniform success" in 1798, and the notorious failure of the other acids, and every remedy, with exception of the "nitrous vinegar," that in this preface to his work in 1819, on "The Improvement of Medical Science," have said, "it is not supposed that any agent has an exclusive power of removing disease, or of exclusive virtues." The very "uniform success of the nitric acid" proved its "exclusive power," and "exclusive virtues."

Plants, vegetables, and fruit, possess a great degree of nutrition, which readily amalgamates with the fluids. I have therefore little doubt that the paste, which is purely vegetable and aromatic, with the auxiliary of the anti-*scorbutic acid* made of fruit, will afford you official remedies against the disease, if not, you have only, according to the instructions herewith sent, to add the "nitric acid" to the anti-scorbutic.

I now, my dear sir, bid you farewell. May Heaven protect you in your perilous pursuit, and finally, whatever be the result, may He restore you safe to your native land.—Believe me to remain, yours most truly, W. WHITE.

To Captain Sir John Ross, R.N., C.B.,
&c. &c.

Sir JOHN ROSS, C.B., to Captain WHITE.

Ayr, 16th May 1850.

MY DEAR SIR,—I return you many thanks, both for your communication touching the treatment of the scurvy, the

instructions for the use of the different articles you supplied me with, and for the extracts from Dr. Maclean's works.

To gratify the good folks of Ayr, and the Steam Navigation Company, I have postponed my departure from hence till Monday, at four P.M., when I shall be accompanied by several steamers, *loaded* with well wishers to the cause. This, however, does not delay my departure from Loch Ryan, on the 23rd inst., when my little vessel of accessary, will be towed quite out of North Channel of Ireland. A vessel more completely fitted and adapted for navigation among ice never left the shores of Great Britain or ever manned with a better crew. We go heart in hand in the accomplishment of the great object, which, under a merciful Providence, we hope that our humble endeavours will be successful.

I have now only to reiterate my best thanks for the kind interest you have taken in the advancement of our enterprise, and with most sincere wishes for the continuation of your health, I am, with truth and regard, my dear sir, very faithfully yours,

JOHN ROSS.

SECTION III.

PROPERTIES AND POWERS OF CURRY.

IN the early ages, medical botany was studied with care, and the properties of vegetables and aromatics well understood; and all human disorders, if curable at all, yielded to their powers. Such was also the opinion of the great physician, Dr. Boerhave, and subsequently of many other eminent medical men. The English Linnæus, Sir John Hill, declared, that "every human complaint will either admit of relief, or may be cured by vegetable substances." "The production of the vegetable kingdom," observes Boerhave, "supply an abundant variety of juices, which most readily assimilates with, or (from experiments frequently tried) are more analogous to the nature of *animal fluids,* and better fitted to correct and purify them when in a morbid and vitiated state, and furnish a healthy, nutritious chyle, than any preparations skill or ingenuity *can ever extract* from the mineral kingdom. What affinity (he properly asks) can there exist between *metals,* minerals, &c., and animals? Much, however, may be confidently hoped for and expected from the administration of vegetables, whose component parts and juices are nearly similar to our own."

The celebrated physician, Joshua Webster, who died in 1741, at the advanced age of ninety-eight, and who studied medical botany all his life, was of the same opinion as Boerhave. He thought very highly of "cordial and invigorating articles" for the scurvy, and in consumption too. "It is an axiom," he says, "that a disease, the leading features of which are weakness, must be cured by invigorating remedies, if at all curable." "A weak body," he also observes, "can do little towards the expulsion of an internal foe, unless the constitutional effects, or, in the language of the schools, the *vires medicatrices*, be powerfully seconded by the action of well contrived remedies; with this intention, a diet, consisting of *cordial, invigorating articles*, which contain a large quantity of nutriment in a small compass, is entitled to the first consideration, and will do infinitely more towards the restoration of health than *drug-enamoured* persons may easily believe, or drug-retailers be willing to allow. Nevertheless, it is a demonstrative truth, that by due patience, perseverance, and a strict attention to rules, many have been cured of confirmed consumptions by a judicious dietic plan, unaccompanied by a profusion of disgusting, nauseating drugs, assisted only by a single medical preparation, which was competent to decompose and expel the morbid virus, the latent contaminating principle or basis of the disorder."

From those great physicians we learn the vast importance which attaches to the vegetable kingdom for the cure of disease, and of "cordial invigorating articles towards the restoration of health." But still, with those convictions upon their minds, they do not appear to have understood the means of turning their theory into practice. This seems to have remained for future generations by accident to find out, as it shortly will be seen.

The vast importance of food of proper kind, in time of health as well as disease, is admitted by all modern eminent writers on diet and indigestion, such as M. Brossais, Barrass, and Laennec, Drs. Paris and Coombe. Dr. Crele, in his essay on good living, remarks, that "philosophers would have been more usefully employed in examining the qualities of turtle, or the process of pickling, than in pursuing idle *etouderies*, and spinning fantastic theories." He had "had recourse to botany, zoology, physiology, and all the sciences;" had "ransacked all the libraries for the opinion of the learned;" "the best living authorities for their knowledge of dainties;" and "amateurs of fortune" "to obtain information on the great process of eating and drinking;" "but after all," he acquaints us, that "he had to lament that our most profound knowledge was only a sort of *respectable ignorance;*" and that "chemistry, *the science of the table*, greatly disappointed his hopes," as "not

even the voluminous systems of the science, with easy introductions to chemistry in everybody's hands, none of them, no not one, even one, mentions in detail the process so important to our existence, as the preparation of food, in preparing it skilfully on scientific principles, so that it shall prove both savoury to the taste and wholesome to the constitution."

Let us now turn to the pages of Captain White's "*Essay on Curries, their Healthful and Medicinal Properties*," published in 1844 (now out of print), to learn the "process so important to our existence" as the "preparation of food" "skilfully on scientific principles, so that it shall prove both savoury to the taste, and wholesome to the constitution."

"The healthful and medicinal properties of curries rest upon qualities not before sufficiently understood. Although the value of aromatics for stomach purposes, in health as well as disease, is well known, it has always occurred to the author, that the method of most effectually administering them, is but very imperfectly understood. The simplest and best way is evidently in the food. More importance is to be attached to this than the medical profession will admit of. But it must not be forgotten by them, that they themselves make very free use of aromatics in most stomachic and bowel complaints, and invariably in all cases of *extreme exhaustion* from long or serious illness, to give tone to the stomach, and aid the organs of digestion. In short, they form the great sheet-anchor of the medical world, and constitute the basis of '*confectio aromatice*,' the quintessence of their cordial saline draughts."

"As a savoury and healthful diet, easy of digestion, no dish can be compared to a curry. This is easily accounted for. The compound from which a curry is made out of India consists of a variety of seeds and aromatics, highly impregnated with essential oils, of different flavours and properties, and some few roots that contain valuable stomachic properties. These, when blended together with care as to due proportions, afford a most savoury dish, and at the same time a diet that is highly conducive to health, by its invigorating powers and capacity, to keep the body in the most salutary state. The qualities of the respective ingredients are cordial, tonic, stimulant, and aperient; in effect, highly digestive, anti-bilious, anti-spasmodic, anti-flatulent, soothing and invigorating to the stomach and bowels, preventing debility in warm weather, and fortifying the constitution against susceptibility to cold in the severest; and very frequently being capable of being partaken of when all other food is rejected; its very fragrance often provoking an appetite when none prevails."

Curry so constituted, the basis of which being purely aromatic, cannot have been objected to by the medical profession on that account, as they make very free use of aromatics them-

selves, in all stomach and bowel complaints, and invariably in all cases of extreme exhaustion, from long and severe illness, to strengthen the tone of the stomach and aid the organs of digestion. Their prohibiting the use of curries, as pernicious and positively injurious to health, has been in consequence of the fiery compounds generally sold, devoid of aromatics, and miserable jumbles of peppers, roots, &c., without any reference to the quality, proportions, or knowledge of the effects which they are calculated to produce; and merely looked upon as a way of making matter of gain. The compounders and vendors having no knowledge of the dish, and for the most part ignorant that those dried materials are merely, at the best, but a very indifferent substitute for the raw ingredients, which are invariably throughout India used. Yet we have "*Schah Soojah's Curry Powder*," "*Tippoo Sahaib's Curry Powder*," declared to be made from "*The Original Receipts*" of the very powders used by those celebrated Indian princes.

"All curries," continues Captain White, "are stimulating, and that without inordinate use of peppers; and this very stimulating power, qualified as it is in its effect by the virtues of the essential oils, may be considered as one of their most valuable properties. The bile, indeed, which plays such an active part in the economy of human life in time of health and disease, possesses stimulating powers without which life would be extinct. In all cases of debility of the nervous system, where curries would be very useful, we shall be told that they would be extremely dangerous because of the "great difficulty sometimes, in distinguishing it from inflammation." Yet we are at the same time told by *The Medico-Chirurgical Review*, that "dire experience has taught some thousands of medical men, on both sides of the channel, that the stomach and bowels may be the seat of an affection purely nervous, quite independent of inflammation. Such is the case in the cholera morbus, a failure of the nervous energy, and the consequent inertness of the digestive organs; and which has long been considered by the most eminent pathologists as the 'seat of the disease.'"

Broussais and Laennec "lay it down as a valuable practical rule in chronic affections of the heart, that, previous to having recourse to any remedies intended to act directly on it, we ought to be assured that the *digestive organs are in a healthy state;* that their mucous surfaces are freed from irritations, their vascular system not morbidly distended, and the liver is performing its secretory functions." "We hold this," says *The Medico-Chirurgical Review*, "to be a golden rule, as well in other chronic diseases as affections of the heart."

This doctrine will apply to the scurvy, for, until the digestive organs act with healthy energy, it is impossible that any benefit can be derived from food.

"The fulfilment of healthy digestion," says Dr. Coombe, "is of even greater importance than the selection of the proper kind of food. This," he says, "is to be ascertained by personally observing what kind of food agrees best with the stomach and constitution. When there is no undue oppression and discomfort after our meals, but, on the contrary, we feel light or refreshed, and, after a time, ready for renewed exertion, we may rest assured that the food we have taken is wholesome and suitable for us, whatever be its nature and general effects; whereas, if without committing any excess or other dietic error, we experience the opposite sensations of oppression, languor, and uneasiness, we may be just as certain that our food, whatever its general character for lightness and digestibility, is not wholesome or suitable for us under our present circumstances."

Dr. Paris, on the same subject, observes, that "the advantages which are produced by rendering *food grateful* to invalids, are so striking that the most digestible aliment, if it *excite aversion*, is more *injurious* than that which, though in other respects objectionable, *gratifies the palate.* If feelings of *disgust* or *aversion* are excited, the *stomach will never act with healthy energy* on the injestia, and in extreme of *dislike*, "they are either returned or they pass through the alimentary canal almost *unchanged.* On the other hand, the *gratification* which attends a favourite meal is in itself a *specific stimulus* to the organs of digestion, especially in weak and debilitated habits."

It would appear from this, that two things are highly essential for *invalids*, namely, a food that is *grateful to the palate*, and at the same time most *digestible.* This can only be found in a curry such as that made from Captain White's Paste, "prepared skilfully on scientific principles;" "food both savoury to the taste, and wholesome to the constitution;" "grateful to the palate, and in itself a *specific stimulus* to the organs of digestion, especially in weak and debilitated habits," "*exciting the stomach to act with healthy energy.*" This may be accounted for in a twofold way. In the first place, from the character of the materials used in the compound; and in the next, by the method of cookery. By cookery, the principles of food are chemically changed, and the extent and nature of these changes greatly depend upon the manner in which meat is applied. In boiling, a large portion of the soluble constituents are lost, while in stewing, the process of a curry, they are preserved, and the constituents not properly soluble are rendered softer, more pulpy, and, consequently, easier of digestion. Thus very materially aiding what is termed "*the almost mysterious process of digestion*," and a knowledge of "*the greatest act*," which we are told by *The Medico-Chirurgical Review*, "consists in regulating the diet to the susceptibility of the stomach."

From the remarks of those celebrated physicians, we per-

ceive the vast importance which is to be attached to affording to invalids "diet agreeable to the palate." Mr. Fife, the Greenland master of the *Hecla*, had been for several weeks "in a state of extreme debility, almost without pain," and required a greater sum of exciting power than was applied to him. He had "taken so great an aversion to the various anti-scorbutic remedies which were administered to him, that he could seldom be induced to take any of them." No "specific stimulus to the organs of digestion," so essential, "especially in weak and debilitated habits," was administered to him." No "food grateful to the palate" afforded to him. "Feelings of aversion and disgust were excited;" and for the last "three weeks previous to his death, the debility continued to increase."

It is impossible to say what effects curry in this case might have produced; but, upon the principles laid down by the celebrated physicians who have been quoted, there is every reason to believe that had it been afforded to him, and had it proved "*grateful to the palate*," it would have been a "favourite meal," and, consequently, a specific stimulus to the organs of digestion, and "the stomach" would have "acted with healthy energy in the injestia." By those means, "a very valuable life," as Captain Parry records it, "might have been saved."

It will have been observed that Captain White in his letter to the Lords of the Admiralty of the 1st of January 1850, states, that during the cholera of 1849 the healthful and medicinal qualities of the curry paste had been fairly proved, in scores of instances, in public institutions with the approbation of the medical attendants, and in many other instances without, and that the results invariably proved most successful. It will, therefore, now be proper that some demonstration should be given of the truth.

In January 1849, when the cholera had broken out at Jennings-buildings, or the Rookery, at Kensington, Captain White by the politeness of Mr. Gazzarroni, surgeon to the Kensington poor-house, was permitted to accompany him round the buildings to see the various cholera patients. This he did many times, frequently remaining there for an hour or two at a time. His object was to see the precise symptoms of the disease, and the treatment adopted for its cure. After repeated visits he became convinced, that besides the locality the want of better food was the cause of producing much of the disease, and that the convalescents required a better and more stimulating food than that they had been used to. There were but two ways of avoiding the evil: the one was that of the removal of the whole of the people in the buildings to more open parts of the town; the other, the affording them plenty of diet suitable to the occasion. On this subject Dr. Charles Maclean observes:—

"As epidemic disorders depend upon the qualities or vicissitudes of the atmosphere in its capacity of an exciting power, so the proper means of prevention will consist in the general removal of persons exposed to the operation of those qualities or vicissitudes, into air more pure, or more agreeable; or, in situations where, consistently with the views, occupations, or necessities of the inhabitants, such removal cannot be effected, in maintaining the excitement of each individual at the highest practical degree of vigour, so that he may be enabled to resist the influence of those qualities or vicissitudes of the atmosphere to which he must continue exposed."

Having submitted to Mr. Gazzarroni those views upon the subject, there appeared to be insuperable difficulties in the way of adopting either plan. The population were between six and seven hundred, and the bulk of them had alone their own resources to look to; in short, that it was only the sick to whom he could order food. I felt perfectly persuaded that had they been fed upon rice and a curry made even from the coarsest part of the ox, it would instantly have changed the complexion of the place. I therefore proposed to send Mr. Gazzarroni a beef curry for trial by himself, in order that he might ascertain its quality and try its effects. This he did, and found it to be a most excellent stomachic; and thought that it might be introduced, with very great advantage, to old people in the workhouse who had lost their teeth, and he expressed a wish to try it; and suggested that Captain White should obtain permission from the Poor-Law Board, in order that it might be done. The application was made. At the same moment the cholera was committing its ravages at the Female House of Refuge at Hackney. Captain White visited that institution, and was very politely received by the resident assistant-surgeon, Mr. Reynolds, by whom he was very politely conducted over the wards. The weather was exceedingly boisterous, almost an incessant hurricane, with heavy rain. A large portion of the inmates had been removed. In one ward there were seven cholera cases, some of whom were doing well. In another ward there were five convalescent cholera and dyspepsia patients. Upon leaving the wards Captain White expressed to Mr. Reynolds his opinion of the benefit that the latter patients might derive, particularly so considering the weather, from curry; and he mentioned to him the trial which had been made by Mr. Gazzarroni, and the application which had been made to the Poor-Law Board, at the same time proposing to send a beef curry for Mr. Reynolds to try himself. He very readily accepted the offer, and on the following day, by twelve o'clock, it was sent. Captain White also called about one, and shewed Mr. Reynolds the answer of the Poor-Law Board, stating that there could not possibly be any objec-

tion to the trial of the curry in the workhouse at Kensington if the guardians did not object; but that they were not empowered to issue orders to require them to do so. Mr. Reynolds having partaken of the curry liked it himself so much and so highly approved of it, he resolved to offer it to some of the convalescent cholera and dyspepsia patients. Having done so and a desire having been expressed by several to have it, Captain White caused some rice to be boiled, superintending it himself, and when ready it was served out with the rice to one of the matrons, suffering under diarrhœa, several dyspepsia and convalescent patients; some others in health also partook of it—in all, eight; and Mr. Reynolds himself dined off of it. On the next day when he called he found that it had agreed remarkably well with all of them but one, and that one a very severe dyspepsia case, the patient not having for many days taken any food, and at the time had a blister on her chest. She had taken a liking for it, when she would have equally have rejected any kind of food. The whole of those who had partaken of it felt it so comforting and invigorating that they all expressed a wish to Mr. Reynolds to have it again. A supply was accordingly sent on the next day, and Mr. Reynolds and the whole of them again dined off of it. This was on a Thursday. When Captain White called on the Friday, he learned that it had again given very great satisfaction, and that they had all expressed a wish that they might be allowed to have it twice a week; and Mr. Reynolds stated his intention to recommend to the committee, when they sat on the following day, that the request should be complied with. That recommendation was made, and Captain White learned from Mr. Reynolds that it was objected to, and refused, one of the committee observing, that they wanted no "*new fangled things introduced there.*" In fact, Mr. Reynolds appears to have met with anything but approbation for what he had been allowing to be tried, or having permitted Captain White to traverse the wards, to see and learn that which it would have been somewhat inconvenient and disagreeable to meet the public eye. Mr. Cobb and Mr. Granger, of the Board of Health, may probably understand this, and remember something about the *perforated zinc plates* instead of glass in the windows. Mr. Reynolds offered to testify to what had taken place; but, when requested to do so he declined, as he had been admonished to do nothing of the sort. By whom he was so admonished is easily to be seen. Mr. Reynolds happened to be a pupil at the London Hospital under Doctor Cobb, and he had by him been sent to reside at the Refuge when the cholera broke out; the surgeon belonging to the institution, as Captain White understood, considering the disease to be infectious, not wishing to attend. Illness, of

course, was the ostensible excuse. As often as Captain White called, there was no surgeon there.

Let us now return again to the cholera at Kensington. The experiments which had been tried at Hackney were reported to Mr. Gazzarroni, as also the letter presented to him that had been received from the Poor-Law Board. Mr. Gazzarroni immediately communicated the subject to Mr. Godrich, of Old Brompton, and Mr. Frost, of Notting Hill, to whom jars of the curried beef and curry paste were forthwith sent for trial. After trying the beef curry, and many experiments with the paste, those gentlemen, highly approving of both, announced their readiness to make a favourable report to the guardians, and to recommend a trial of the "curried beef" with twenty of the inmates of the workhouse. A letter was then addressed by Captain White to the guardians accompanied with a copy of his letter to the Poor-Law Board, together with their reply. The surgeons were then called upon and they made their report, and the guardians sanctioned an immediate trial. "*Beef curries*" for twenty was sent down, and Captain White attended in the kitchen and boiled the rice. It was a Board-day, and that upon which the inmates had roast meat. The surgeons and many of the guardians were present, when, after prayers, Mr. Gazzarroni announced to the paupers that a beef curry, much approved of by him and his brother surgeons, had been prepared for a few as thought proper to try it. The offer was readily embraced, and seventeen partook of it in preference to the roast meat; and all of them liked it very much, and it was afterwards found to agree with them all very well. The beef curry being nearly all gone without the guardians having had a taste, as Mr. Gazzarroni had some of the paste it was suggested that the disappointment should be remedied by some fish curries that could be quickly made. Mr. Gazzarroni then, at his own expense, immediately sent off for four pounds of salmon and two pair of soles, and four pounds of rice was instantly put on to boil. In ten minutes the fish appeared, and in the presence of the surgeons and several of the guardians, Captain White set to work to cook it in his "*new* fangled" way,—that is, cutting it into small pieces. In ten minutes it was on the stove, floating in a pale straw coloured liquor, about the consistency of cream, made from the paste diluted with water. In ten minutes more the fish was done, shipt, and with the rice upon the table in the board-room, as was promised, within one half hour by the clock. Eleven of the guardians and the three surgeons sat down to partake of it. After the elapse of an hour the three surgeons returned and Mr. Godrich reported the high approbation of all the guardians of the dish, and that it was the opinion of all of them that it was by far the best way of any of cooking salmon;

that they were very much obliged for the treat; but that some of the guardians thought that in no shape or form could curry be introduced. To that decision Captain White did not the least object; in short, he never expected it, and his object had been obtained by having the healthful and medicinal properties of his preparations of curry fully ascertained.

Those experiments were followed up with others of a different description, and with very great success.

On the 28th of June, Mr. Hearder, 18, Skinner-street, Snow-hill, mentioned to Captain White a death from cholera which had taken place some time before opposite to his house. Having inquired as to the neighbourhood in the rear, finding that there was a court, he went over to ascertain its state, and he found it to be exceedingly clean and well drained, and that no case of cholera had been there. About the 10th of July he happened to call again, and he was then told that a very severe case had some days before taken place in the buildings, and he believed that the individual had died, and that, from the description given of the woman, he thought that she was the same as Captain White had spoken to when he was previously there. Captain White immediately went over, and found that it was the same woman; but that she was not dead. He went to her house; her name was Harriet Hills, aged fifty-two, wife of a tailor. He was informed that she was very ill, had been carried about nine days before to St. Bartholomew's Hospital to all appearance dead; but that she survived and had returned home the day before very bad. Captain White requested permission to see her, and was invited upstairs. He found her in a state of extreme exhaustion, and her brain much affected from the powerful narcotics which had been given to her; and unable to take any kind of food, even tea. He recommended some beef tea to be made, and in an hour's time he called again with a small jar of the paste, recommending that a little of it should be used therein. After a day had passed, he called again, and found that she had had a most severe relapse of diarrhœa. She was scarcely able to speak, and evidently would soon have been in a stage of collapse. She had for some hours been taking medicine which a surgeon had given her, but under it she continued to get worse. Perceiving that it was a case of life or death at the moment, Captain White obtained a bottle, and went and procured that which alone he thought could be of any use; that was lovage and brandy. It was with difficulty that a teaspoonful at a time at the interval of many minutes could be taken in; but it had a gradual and decided effect; so much so, after a quarter of an hour she began to talk. It took about half an hour to get a wineglass of it down, by which time the tenesmus had stopped, and putting her hand upon her forehead, she said,

"Oh, I feel so much relieved; but I am sleepy." Capt. White desired her to sleep, and for her not to be disturbed; and when she awoke to repeat the mixture, brandy and lovage, again. She slept well from two till five, then awoke and did as directed. She fell off to sleep again at nine o'clock, and slept sound until five in the morning, when she awoke much better. The beef tea, with a little of the curry paste stirred into it, proved very grateful to the palate; she took a few tablespoonfuls of it at a time, as much as she pleased, and increased the paste to suit her palate, and at last also boiled in it a little rice. Continuing this course she continued to gain strength, but it was ten days before she could touch anything else. It happened, fortunately for this woman, that she was exceedingly temperate, and not addicted to the use of spirits, otherwise the result might have been very different. She is now alive, residing at No. 1, Dean-street, Fetter-lane, a first-rate waistcoat maker, extremely moderate in charges, and a person Captain White would strongly recommend to the patronage of the humane, having to support herself and her husband, aged seventy-eight, by the labour of her hands.

A few days subsequent to this, as Captain White was passing up Whitecross-street, at about one o'clock, his attention was attracted to a cab that had drawn up at No. 18, on the other side of the way, and was surrounded by a mob. Upon crossing over he found that a woman had just been brought home, apparently dead from the cholera. Upon entering the passage, he found her placed in a chair, her head fallen over the back, her eyes fixed, her extremities cold, no pulse to be felt, and but a very slight pulsation at the heart. A very good and humane gentleman, Mr. Pugh, of the "Peacock," in the same street, was also in the passage, and after giving the husband half-a-crown to get anything for the moment, he sent persons off in one direction for a surgeon, while he went himself in another. Here, again, seeing the extreme danger, and that before a surgeon might arrive she would be quite dead, Captain White resolved to take her in hand, and, as a momentary relief, until medical aid should arrive, he was determined to try the lovage and brandy, the powerful stimulatory effects of which, when the lovage is pure and good, he had had ample proofs of. He therefore desired the husband to go and get a certain proportion of each, separate. By those means the quality of the lovage could be tested. Ten minutes elapsed before he returned, and during that time she continued in the same state. When it was brought, the jaws were so locked that it was extremely difficult, with great force, to open them so as to be enabled to introduce half a teaspoonful of it. It instantly returned by the side of the mouth. The position of the head was changed, and administered to her again. It remained a few seconds, but

was cast out with heavy convulsions, as in the last gasp of death. "It is no use; she is gone," was then said. They were requested to remain quiet, and told that the sign was a good one, and not to fear. A third attempt was made at an interval of about five minutes; this remained for a few seconds, gurgled in the throat, convulsions and cramp came on, horrid grinding of the teeth, the eyes still turned up and fixed, scarcely anything but the white to be seen. A basin of cold water being brought, it was used as an exciting power, by sprinkling it with force in the face. As soon as tranquillity returned, and the mouth could again be partially opened, the remedy was again applied, and followed by the same symptoms, but not so severe. At an interval of a few minutes it was repeated again, and went down with more ease.

The action of the heart, which at one time was scarcely perceptible, had now considerably increased, and a slight pulsation was also felt at the wrist. A teaspoonful was repeated again, and with it she began to breathe, her pulse increasing, and warmth; and her eyes rolled about in their sockets. Another doze, and she gave a heavy sigh, and roused as though from a trance. After being left quiet for ten minutes, she was enabled to be got up-stairs, and sat upright at the top of the bed. The remaining half wineglass of the remedy which she had been taking was now given her; she had become quite warm and comfortable, and able freely to talk. It was now two o'clock, just one hour since she had been brought in, when in walked a doctor, to whom Captain White handed over his patient, doing well. But for his having accidentally been passing by, all those who saw her—and they were many—declared that she must inevitably have been dead long before "medical assistance" came. The second glass was just going to be administered when the doctor came in, and sincerely sorry was Captain White to see him, as he felt satisfied she would have gone on better without him. Anxious for his poor patient, he called again at night, and as he expected, he found that so far from having improved, she was fast relapsing into a very bad state. He found two different bottles of medicine, and he tasted them both. It was explained thus. Mr. Lloyd, the parish surgeon, at five o'clock, had called upon Mr. Southwood to demand from him his patient; certainly a very delicate proceeding and most desirable thing. The patient was given up; the medicine changed. Millam, the husband, then put into Captain White's hands a note, observing, "I can't make this note out." Stupidly enough thinking it possible that the man could not read, Captain White began to do it to him, when he interrupted him with, "I can read it; but I can't make out what he means. I never said that it was cholera morbus; it was Mr. Southwood who said so."

The note was to the overseer of the workhouse, and was this:—"Millam is unable to go to work, being unwell, but falsely reported cholera." Signed "Loyd." For reasons best known to himself, Captain White advised Millam to give no more of the medicine to his wife, but to go again to Mr. Lawrence. He replied, "I don't intend that she shall have any more; she has got worse since she took it: I will wait until the morning, and I can get orders without going to the workhouse for them." "By the morning," replied Captain White, "without aid, she will be dead. Put on your hat, and come with me to Mr. Southwood." In a few minutes Captain White presented himself to Mr. Southwood, who gave him the explanation how his patient had come to change hands. Captain White then mentioned what had passed at Millam's, and he told Mr. Southwood that the husband was at his door, and he recommended Mr. Southwood to resume his patient, as, if she died, he should openly attribute it to mismanagement. Much to his credit be it said, Mr. Southwood immediately put on his hat, saying to Captain White, "I will accompany you to see her." They entered the apartment, and Mr. Southwood found her much worse than when he saw her last. He directed the husband to attend at his house for some medicine, and Captain White and Mr. Southwood went down stairs together, and at the door wished good-night. Somewhat restless and anxious about his patient, Captain White called at about one o'clock on the following day, and, as apprehended, found her getting worse. He immediately waited upon Mr. Southwood, and told him that if other remedies were not applied, that he would certainly lose his patient. They again proceeded in company to see her. Mr. Southwood was by this time fully aware of Captain White's knowledge of the disease, and asked him what he would recommend should be done. Captain White instantly suggested; and he was told that it should be immediately sent. Captain White at nine o'clock visited the woman again, perfectly satisfied that if his suggestions had been attended to, he would find her getting better. He, however, found her much worse, unable to speak, going off in what the doctors call consecutive fever,—a new disease, the result of bad treatment after the original complaint had been removed.

Captain White forthwith called upon Mr. Southwood and complained of his not having given the medicine as promised. Mr. Southwood excused himself by its having been from a pressure of business forgotten; but that he had recollected it and was just going to send the medicine off. To this Captain White objected as so much time had been lost, and as the remedies which were at once to be applied every two hours, would now be inert,—and another reason assigned was, that there was no relying upon the punctuality of administering

medicine throughout the night; and unless more powerful remedies were applied before the morning she would be a corpse. Mr. Southwood again accompanied Captain White to see her, and Captain White again prescribed, and it was given to her. Mr. Southwood at the same time giving instructions, that if she was worse immediately to call him; and in that case Captain White had suggested what to do. The next day, at twelve o'clock, Captain White had found the woman had slept tolerably throughout the night, and was again comfortable and doing well. Mr. Southwood had not been to see her, and as she was better, they had not gone to him, expecting that he would call.

Captain White called upon Mr. Southwood, and congratulated him upon the state of his patient. From Mr. Southwood he learned that he had been pressed very hard with other cases, and as he had not been called upon as he had desired, he concluded that she was better. Captain White then suggested to him what next to give her, in which Mr. Southwood acquiesced: he also recommended that beef tea should be given her with some of the curry paste, and mentioned the success which had attended it in the case of the woman Hills. He at once acquiesced in its application, and the little jar which had been brought for Mr. Southwood to give to his patient, he requested that Captain White would do it himself, and give the necessary instructions to them. They again repaired to the bedside and found the patient comfortable but very weak, with beef tea ready on the hob, which she had tried and could not take. Captain White told her that he had brought something to put into it, approved of by Mr. Southwood, that would coax it down. A little of the tea was put into the cup, a piece of paste about the size of a pea stirred in, this she liked very much, it was increased to her palate, and she greedily took it down. She was told to take as much as she fancied, and punctually to take her medicine. On the following day she was cheerful and much better; on the next, when Captain White called, she was sitting up with her family at tea. Millam the husband had been in charge of the horses and harness of the Lord Mayor's state carriage for eighteen years.

The medical profession will doubtless think that Mr. Southwood was wrong in abetting such atrocious quackery, and that it were better that she had died by adhering to the doctrines and dogmas of medical schools. The public, however, Captain White thinks, will say that Mr. Southwood acted quite right, and will give him great praise for having done so. Mr. Southwood had been in India, and he had there imbibed more enlarged views; and he justly considered that the medical education which Captain White had had, and his great experience in the disease, repeatedly in India as well as in England, was entitled in such a case to consideration.

But how different was the result of the practice of a medical gentleman at the very same time a few paces off?

Bryant, aged 40, No. 6, Way-square, Whitecross-street, a strong powerful man, had been ill of diarrhœa then cholera in all three days. He was then placed in cold wet sheets in which he died, as hundreds of others did elsewhere. Dr. Bally, physician to the Milbank Penitentiary, at a coroner's inquest on the body of one of the inmates who had died of cholera, swore that having *read* in "*The Times*" of the practice, he had tried it but it did not succeed." The proof was in the man then lying dead before them. Now of course Captain White's practice, though he saved his patients, was downright quackery, and if either of those women had died under his hand, by the evidence of medical men it would have been brought in manslaughter, and he would have been committed to Newgate to stand his trial for the offence. This he was perfectly prepared for; and quite ready to meet; and in some degree anticipated. But it would not have been a very pleasant day for some others if he had stood in the dock, for in cross-examination there would have been elicited some comical truths. But talking of quackery, Captain White would ask Dr. Bally, if it was not first-rate quackery placing the man in cold wet sheets; and further to shew by what doctrines of the Schools of Physic was it done? It must have been when the routine practice of the schools had failed. The only excuse for which is thus furnished by the eminent Dr. Charles Maclean. Speaking of the young physician, and why it is not applicable to the old he does not say, he observes that, "Relying upon the knowledge acquired at the Medical Schools, in no case of severe disease is the result of his treatment corresponding with his expectations, whether he attempt to apply the doctrines of Hippocrates, Celsus, or Gallen; Paracelsus, Staahl, or Hoffman; Boerhaave, Cullen, or Brown. In the practical applications, he finds, to his sorrow, that those precepts which speculatively he was wont to consider as infallible, are nothing more than mere authoritative opinions; and that medicine is still too truly in the degraded condition of a conjectural art." This latter fact at the conclusion of the cholera was admitted by Mr. Granger, of the Board of Health, when he said, "however degrading it may be to the medical profession, there is no cure for the plague; there is no cure for typhus; there is no cure for cholera!"

With one more case and Captain White will have done. Calling one morning at the kitchen of the Reform Club to see M. Soyer, Charlotte, a French cook, came up to him, looking exceedingly ill, and stated that she had been laid up nine days with the cholera, and could retain nothing not even tea upon her stomach. Captain White recommended her to take some

beef tea, and as there was none to try some light soup with a little of the curry paste in it. Some was immediately brought, and Captain White stirred a little of the paste in. When she tasted it she said, "Oh, it was very nice!" Captain White added more of the paste, and brought it up to her palate. She immediately partook of it; it remained upon her stomach, and in five minutes she said, "I feel so warm and comfortable here," putting her hands upon her chest, "and I have not been warm these six weeks before!" She had beef tea made, and continued it with the paste until she got well. She then had a second attack, and the doctor was sent for; but before his medicine had arrived she had sent for lovage and brandy and taken it; and when the physic came, in the presence of the other servants she threw it under the grate. With the lovage and brandy, beef tea and paste, she cured herself. After this, Captain White when he called, was greeted as "Doctor White."

It was a knowledge of the various successful experiments which had been tried which induced M. Soyer to write his anti-cholera diet, consisting of curries, and which was advertised as highly approved of by the General Board of Health. It also induced him to give his lovage and brandy cure. Both of which if he had taken Captain White's advice he would at such a time have abstained from.

It will here be requisite to caution the public against the use of all pastes but Captain White's as probable to produce any such effects; and as it is not generally to be had, most of the fashionable shops having ever since its introduction opposed it, and declined, under a variety of pretexts, to supply the public with it, because of greater profit being derived from other inferior articles, Captain White begs to call attention to a few houses who sell nothing but his curry powder and curry paste; both of which have been for the last four years exclusively used at the Oriental Club, Hanover-square, and now at the Reform, and other clubs:—Robinson's, 44, Piccadilly; M. P. Davies, 63, St. Martin's Lane; Wood, 88, Oxford-street; Dunn, 59, Cannon-street; and Skelton, 49, Bishopsgate-street; and such houses as may exhibit a card. The public are also cautioned against a paste sold at very respectable shops, with forged labels having the Indian arms of Captain White upon it. The public are also cautioned against any curried beef that may now be offered for sale, preserved or otherwise, and be assured that they are nothing but gross pick-packet impositions; as the curried beef never has or is intended to be offered for sale.

By the facts which have been stated it will appear tolerably clear that when Captain White obtruded the curry paste upon the notice of the Lords of the Admiralty, there were some toler-

able good ground for assuming that it might be useful in the Arctic seas, as "occasionally" affording a "more stimulating diet," if not useful as an anti-scorbutic; and that had they but condescended to inquire, as intimated, at the Reform Club, they would have had ample testimony afforded to them of the powers of the paste in cases of extreme debility during the cholera of 1849.

Let us now consider the Reports which have been made of the curry paste by the officers who took it with them into the Arctic seas. Of course from Captain Collinson commanding in Behring's Straits, none as yet can have been received. Captain White in his letter to the Lords of the Admiralty, January 8th, 1850, states, that "it will also be found greatly to improve the flavour of all the preserved soups, and to render them far more comforting to the stomach, more durable and supporting, and, what is of great consequence, more conducive to health." This, of course, was intended to apply to those productions from the very best makers, and certainly not supposing that it was to be applied to putrid meats. The prompt decision of the Admiralty, that "they must decline to supply it for the officers and crew of the Arctic expedition" under Captain Collinson's command, induced Captain White to doubt whether in his representation to their Lordships he must not have made a mistake. He therefore submitted the subject for the opinion of a very experienced officer Captain George Denny, H. E. I. C., of the firm of F. Green & Co., 64 Cornhill, and his answer was to the following effect:—

64 Cornhill, January 10, 1850.

My dear White,—It is eight years since I wrote to you that your paste makes the best curry I ever tasted out of India. The beef curry which you now have sent proves it; and it was one of the best I ever tasted, and I made my dinner off of it. Why do you not put it up in tin canisters, the same as the preserved meats, so that it could be taken to sea? It would be invaluable there. There can be doubt whatever but that the paste would greatly improve all the preserved soups and meats that are taken to sea.—Believe me, my dear White, yours, most sincerely,

George Denny.

Captain Erasmus Ommanney to Captain W. White.

20th October 1851.

Sir,—It affords me great satisfaction to express my opinion relative to the curry paste with which I was supplied by you during the late expedition to the Arctic seas. Its flavour surpasses any I have ever tasted; in the absence of any great change of diet it always afforded a most palatable diet, and

greatly relished; it is well adapted for all ships, as it is easily made without the aid of a first-rate cook; and all sea-going people should take it. It is an admirable article, and I should always like to use it, and be happy to give it my best recommendation.

ERASMUS OMMANNEY, *Capt. R.N.*
Late of H. M. S. *Assistance*, Arctic Expedition.

Admiral Sir JOHN ROSS to Captain W. WHITE.

London, Nov. 10, 1851.

MY DEAR SIR,—I am afforded much satisfaction by giving you my willing testimony of the vast superiority of the anti-scorbutic acid which was supplied by you to the *Felix*, during our late voyage to the Arctic seas, over every other kind of anti-scorbutic I have ever met with, as was proved in two very serious cases of scurvy when the lime-juice and sugar would not remain upon the stomach, while the acid not only did continue, but was decidedly more efficacious.

The curry paste is also no less superior to everything of its kind, and was so found by us during our late voyage; and was exceedingly useful.

Both of the articles having been universally approved of, I have no hesitation in recommending them for general use both in the royal and mercantile navies.—I remain, my dear Sir, yours faithfully,

JOHN ROSS, *Rear Admiral.*

Captain W. White.

Commander PHILLIPS, R.N. to Captain WHITE.

Woolwich, 29th December 1851.

MY DEAR SIR,—On re-opening of the "Steam School" here, I am favoured with a very handsome *Christmas-box* from you, in the form of curry paste, and a kind note, dated six days back, which I hope I shall not be held rude in not earlier replying to, as, in truth, the Christmas holidays kept it from me till this day.

I am pragmatical about curry, my India service has made me so, and I have always held that curry *in perfection* must be made and eaten in India, although they make very good ones at the Cape and St. Helena.

But I can safely affirm that the curry paste we had on board Sir John Ross's vessel, and made by you, is decidedly the best article of the kind twenty-three years' sea service has brought under my observation. It is excellent on bread and butter, as well as an immense improvement of every kind of soup. For Arctic service I would suggest that the package should be of the lightest material.

With best wishes and sincere thanks for your kind and very *palatable* recollection.—I am, my dear sir, truly yours,

C. Gerons Phillips.

Mr. Abertheney, Master of the *Felix* to Captain White.

3, Trafalgar-street, Woolwich, 20th Nov. 1851.

Sir,—I beg to say I have received your letter enclosing a copy of a note from Admiral Sir John Ross, late commanding the *Felix* in the Arctic seas, of which ship I was the master, and in which letter you ask my opinion, as having been many years in the Arctic seas, as to what I think of the curry and mulligatawny paste which was used during the late voyage.

I can fully confirm the report of the Admiral, both as regards the curry paste as also of the anti-scorbutic acid. Both of them are articles of great value for ship use. From the long experience which I have had in the Arctic and Antarctic seas, I have no hesitation in saying that the curry paste is the most useful, and the anti-scorbutic acid the most valuable articles ever taken to sea to prevent that horrible disease the scurvy, the dreadful effects of which I have seen so much of during six voyages in whalers, two voyages in the Arctic regions with Sir Edward Parry, in the *Hecla;* one with Admiral Sir John Ross, in the *Victory;* one voyage with Sir James Clark Ross, in the *Erebus,* to the Antarctic seas; one with him to the Arctic seas in the *Enterprise;* and a voyage with Sir John Ross in the *Felix.*—I remain, sir, your most obedient servant,

T. Abertheney,
Late Master of the *Felix.*

Those testimonials, honourable and gratifying as they are, are chiefly valueable to Captain White, as they prove that in his address to the Lords of the Admiralty there was no humbug; while at the same time the whole of the correspondence, it is to be hoped, will prove that the object in view was something more than self-interest. The same feelings of personal indifference induced him to allow a correspondence to lie dormant two years, which if published at the time could not have failed to be productive of much benefit in the way of trade. But there was another and a more powerful motive which restrained it; and that was, while the exploring expeditions were out that nothing he could say or do should in the slightest degree disturb the attention of the public, or raise a question as to the probable fate of Sir John Franklin and what the result of the expeditions would prove. It has been seen; and the same will be the issue of the expedition now fitting out.

FINIS.